

**A303 Amesbury to Berwick Down  
(Stonehenge) Wiltshire  
TR010025**

**Wiltshire Council Response to  
Examining Authority's (ExA) Second  
Round of Written Questions**

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## WILTSHIRE COUNCIL RESPONSE TO EXAMINING AUTHORITY'S QUESTIONS

ExQ1	Question to:	Question:	Question Response:
Ag.2	<b>Agriculture</b>		
Ag.2.5	Applicant Howard Smith on behalf of Amesbury Farms	<p><b>Agricultural access</b></p> <p><b>Please provide an update in respect of access to Countess Road for Park Farm West Amesbury and West Amesbury Farm for the movement of large agricultural vehicles/ equipment?</b></p>	Wiltshire Council were asked to consider the use of PROW AMES 9a for part of this access, but to date have heard no more. It will be helpful to know if this option is still under discussion.
Ag.2.9	Applicant	<p><b>Field drainage</b></p> <p>In [REP4-052] the National Farmers' Union has requested the provision of an Outline Soils Management Plan to establish the general principles for how soils will be managed. The OEMP commits to the preparation of a Soils Management Strategy (MW-G7) [REP4-020].</p> <p><b>Please provide your view, with reasons, as to whether it would be necessary for an outline version of this strategy to be provided at this stage. In responding please address the reporting/</b></p>	Wiltshire Council ecologists consider that it is important to assess as accurately as possible the volume of the arisings to be excavated and the area that will be necessary for a suitable soil strategy, which enables best possible treatment of segregated soils in the period between excavation and final placement. It is therefore necessary to provide an outline strategy that considers volume of spoil and area required for storage, in order to give confidence that a suitable soil handling strategy can be implemented that will protect the integrity of the different soil types.

		<b>consultation/ approval criteria for this strategy.</b>	
<b>CH.2</b>	<b>Cultural heritage</b>		
CH.2.1	Applicant All Interested Parties	<p><b>Consultation/ agreement/ approval</b></p> <p>The ExA considers that every effort should be made to reach agreement with Heritage Monitoring Advisory Group (HMAG) and Wiltshire Council Archaeology Service (WCAS) on the form and content of the Detailed Archaeological Mitigation Strategy (DAMS) [REP4-024].</p> <p>In the event of disagreement, it considers that the statutory bodies should fulfil their normal role in having the final decision on the form and content of the DAMS. Given the unsurpassed international importance of the site it is vital that this role remains with the nationally authorised statutory bodies, who carry the greatest expertise and who operate in a completely independent and objective manner.</p> <p>Similarly, during the preliminary and main works, with regard to fieldwork issues of mitigation, unexpected finds, the signing off of sites, and so on, every effort should be made to reach agreement. In the event of a dispute, it is unlikely that reference to the SoS would be practicable and it considers that the statutory bodies should again fulfil their normal role.</p>	<p>Wiltshire Council fully supports the view of the ExA in that the statutory bodies should have the final decision on the DAMS and the sign off on the completion of field work during the preliminary and main works.</p> <p>Currently the DAMS still states that Highways England is the sign off body for the fieldwork, which the Council strongly disagrees with.</p>

		<p>The statutory role of Wiltshire Council and Historic England is confirmed in the DL4 version of the DAMS.</p> <p><b>Please comment.</b></p>	
CH.2.2	Applicant	<p><b>Extent of the Mitigation Area covered by the DAMS [REP4-024]</b></p> <p>Some stretches of proposed road line appear not to be covered as mitigation areas in the DAMS.</p> <p><b>Why is this so?</b></p>	<p>Wiltshire Council maintains the view that all areas of the road line need to be mitigated. This is a highly sensitive area for archaeology, both inside and outside the WHS. Both the geophysical survey and trial trenching at 5% outside of the WHS are likely to have missed picking up the kind of small, discreet earlier prehistoric features such as pits and burials that would be expected to be found in the landscape. The Council considers that it is too much of a risk to leave areas unmitigated.</p>
CH.2.5	Applicant All Interested Parties	<p><b>Archaeological loss</b></p> <p><b>Please confirm the location and area of land which would be archaeologically sterilised under the Proposed Development.</b></p>	<p>The Council does not think that the phrase 'archaeologically sterilised' is appropriate. The areas that will be stripped and fully archaeologically excavated will mainly be along the line of the proposed new road and the two portal areas. It will exclude the area of the tunnel.</p>
CH.2.6	Applicant All Interested Parties	<p><b>Geophysical techniques</b></p> <p><b>Discuss the reliability of the investigation results of different geophysical techniques and the need to compare data sets across different techniques.</b></p>	<p>Geophysical survey has been deployed comprehensively across the Scheme to a higher level than would usually be required of a commercial archaeology development. Wiltshire Council's archaeology service is content that the geophysics results have been reliable in relation to the results of the trial trenching.</p>
CH.2.8	Applicant All Interested Parties	<p><b>Blick Mead, Vespasian's Camp, and Amesbury Park RPG Settings</b></p> <p>At the ASI it was clear that, despite the early summer foliage, visibility and aural connection</p>	<p>Whilst the Council may agree with the ExA that the proposed development may harm the setting of these historic assets, the Council considers that this harm is less than substantial and that the public benefit deriving from the works (economic in terms of improved</p>

		<p>exists between these historic assets and areas to the north. During autumn and winter, with the loss of foliage, the visual and aural link is almost certain to be greater. In any event, we cannot be sure the tree screen will remain in its present form. The settings of the assets, therefore, extend to the north and, at present, contribute to their significance through the enclosing backdrop they offer.</p> <p>The Proposed Development may well harm the settings of these historic assets through greater visual prominence of traffic which would be elevated on the flyover, even if noise levels are contained. Also, as was clear at the site visit that the eastern portal, from which traffic would emerge on a rising incline, would be visibly intrusive, particularly at night with upward angled headlights. It would be likely to have an impact on the existing character and significance of Vespasian's Camp.</p> <p><b>Please comment.</b></p>	<p>accessibility to Wiltshire and beyond; and the improvement to the setting of Stonehenge) outweighs this limited harm.</p>
CH.2.9	All Interested Parties	<p><b>DAMS DL4 Version [REP4-024]</b></p> <p>i. Comments are invited on the expanded sections of the Archaeological Research Strategy, including the Research Questions. Can any light be shed on theories concerning changing populations over time, and the idea of a funerary zone to the west characterised by lithics, and a living zone to the east characterised by ceramics?</p>	<p>i. It is the view of Wiltshire Council's archaeology service that there is no evidence to support the theory of a funerary zone to the West or a living zone to the East.</p> <p>ii. Discussions are ongoing with HE regarding the number and position of movement monitors.</p> <p>iii. The handling of topsoil and any artefacts within it is still under discussion.</p>

		<p>ii. Comments are invited on paras 5.2.7 and 5.2.8, which include detail on Tunnel movement monitoring stations. Should movement parameters be specified and trigger points set for the instigation of remedial measures to be put forward by the Contractor for agreement? Should movement monitors also be located elsewhere to safeguard archaeology, and should similar measures be put in place for vibration risks?</p> <p>iii. Comments are invited on para 5.2.11, Handling, storage and placement of excavated topsoil. Why should the first bullet point apply only to topsoil from within the WHS? Who judges whether topsoil could contain archaeological artefacts in the second bullet point?</p> <p>iv. Comments are invited on paras 5.2.43 and 5.2.54, Geotechnical and other intrusive surveys.</p> <p>v. Comments are invited on para 6.1.16, Archaeological Clerk of Works. Should it be monitor rather than co-ordinate archaeological site works – responsibility for co-ordination would probably fall to the contractor.</p> <p>vi. Para 6.1.17, Unexpected finds. The ExA suggests that if agreement is not forthcoming on the significance of the find and the appropriate course of action,</p>	<p>iv. Geotechnical and other intrusive surveys are only being carried out if they are essential to the Scheme.</p> <p>v. The Council disagrees with the point raised in point v. and is of the view that the Archaeological Clerk of Works should coordinate, not monitor archaeological site works.</p> <p>vi. Yes, the Council agrees that the statutory bodies should made any final decision.</p> <p>vii. It is the Council’s view that the local authority should make the decision on interruptions and delays.</p> <p>viii. Plough zone sampling is still under discussion.</p> <p>ix. The approach to tree hole sampling is still under discussion.</p> <p>x. Section 8 of the DAMS is still under discussion.</p> <p>xi. The Council agrees with the wording suggested by the ExA. However, reference should be to Wiltshire Council and not WCAS, as the Council is the body corporate.</p> <p>xii. Appendix D Action Areas is still under discussion; the Council’s current position is set out in more detail in its response to the dDAMS submitted to Deadline 5 (REP5-007). It is the Council’s view that more mitigation is required than is currently proposed in Appendix D.</p>
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		<p>approval of the Wiltshire Council/ Historic England is sought as statutory bodies.</p> <p>vii. Comments are invited on para 6.1.20, Interruptions and delays – who makes the decision regarding the cessation or resumption of work?</p> <p>viii. Comments are invited on paras 6.3.14 to 6.3.16 regarding ploughzone sampling.</p> <p>ix. Comments are invited on paras 6.3.42 and 6.3.43, Tree hollows.</p> <p>x. Comments are invited on Section 8.1 Communications Strategy, Section 8.2 Progress Reporting, and Section 8.3 Monitoring of Post Excavation Works.</p> <p>xi. Para 8.4.2: the ExA suggests 'approved by the TPA in agreement with HMAG/ WCAS'.</p> <p>xii. Comments are invited on Table 11.3, Summary of proposed mitigation areas, and Appendix D Action Areas: Proposed archaeological fieldwork areas and preservation in situ areas.</p> <p>xiii. Flowchart A2, Archaeological Mitigation: phases and roles – should the box heading Project supervision read, Project inspection and monitoring, since the archaeological contractor will supervise his work team and the TPA project manager will inspect, monitor and approve?</p>	<p>xiii. Yes, the Council agrees that the ExA's observation here is correct.</p> <p>xiv. Yes, the Council agrees that the ExA's observation here is correct.</p> <p>xv. The Council's current position on the burial of remains at Parsonage Down is set out in its response to the dDAMS submitted at Deadline 5 (REP5-007).</p>
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		<p>xiv. Flowcharts A3 to A9, should the double headed arrows linking the top tiers of boxes signify agreement?</p> <p>xv. Further comments, if any, are invited on the DAMS provisions for the treatment of archaeology buried under arisings, that affected by haul roads and compounds, and that subject in other ways to vibration, compression, crushing, or distortion [REP4-024].</p>	
<b>De.2</b>	<b>Design</b>		
De.2.1	Applicant All Interested Parties	<p><b>OEMP, Chapter 4: Detailed Design [REP4-020]</b></p> <p>Chapter 4 of the OEMP is headed 'Development of detailed design in the WHS'. However, para 4.4.4 deals with matters outside of the WHS, quite rightly in the ExA's view, since the detailed design aspects should be matters of concern and consistency throughout the whole Scheme.</p> <p><b>Therefore, should the title of the chapter be amended, and its scope widened?</b></p>	Wiltshire Council considers that unless the areas outside the WHS are specifically dealt with separately then yes, the chapter title should be changed to reflect that it covers a wider area and scope.
De.2.2	Applicant All Interested Parties	<p><b>OEMP, Chapter 4: Detailed Design - Design Vision [REP4-020]</b></p> <p>Section 4.3, Design Principles – intended guidance indicated in para 4.3.2 (a), (b), and (c); and in Table 4.1, in particular P-G01, and P-LE01 to 03: The ExA endorses the aim set out in the DAS of minimising the visibility of new</p>	Wiltshire Council agrees with the ExA. The Council has strongly advised that the vision needs to be based on the vision for the WHS as stated in the WHS Management Plan.

		<p>structures within the WHS (para 4.4.3), and responding to two sensitive landscapes; the heritage landscape and the wider setting (para 4.4.9), without competing with them or providing an alternative focus. Overall, an understated approach of restrained visual impact and elegance is appropriate.</p> <p>Despite the proposed guidance intended to achieve this, an imaginative input through an overall design vision is necessary. This is absent from the Scheme at present and, in a Scheme of international importance such as this, it is not appropriate to leave the design to the contractor.</p> <p><b>Do the parties agree?</b></p>	
De.2.3	Applicant All Interested Parties	<p><b>OEMP, Chapter 4: Detailed Design [REP4-020]</b></p> <p>Para 4.4.3: Should consultation also take place on the fencing, or other safety measures, preventing access to the cutting?</p>	The Council's view is that it should be consulted and approve all fencing and enclosures, especially in the WHS due to the sensitivity and openness of the landscape and the need to minimise visual intrusion and preserve legible relationships between the heritage assets.
De.2.4	Applicant All Interested Parties	<p><b>OEMP, Chapter 4: Detailed Design [REP4-020]</b></p> <p><b>Para 4.4.4: Should consultation also take place on:</b></p> <ul style="list-style-type: none"> <li><b>i. River Till viaduct?</b></li> <li><b>ii. Countess flyover?</b></li> </ul>	Yes, Wiltshire Council's view is that it should be consulted on these matters, and has requested to be so.

		<b>iii. Green Bridges?</b>	
De.2.5	Applicant All Interested Parties	<p><b>OEMP, Chapter 4: Detailed Design [REP4-020]</b></p> <p>Para 4.4.14: Notes that it is appropriate that the final decision on detailed design remains the Applicant's preserve, using its expertise and knowledge as to what would be appropriate and operationally feasible in the context of the Scheme.</p> <p>However, matters such as operational geometry and other matters of highway functionality would be defined in the OEMP and elsewhere, and would have been confirmed during the development of the design process well before the final decisions are made on detailed design. Wiltshire Council is the statutory body regarding planning matters, including design approvals, and has expertise and knowledge as to what would be appropriate.</p> <p><b>In the exceptional event of it not being possible for the SCG and The Authority to reach agreement after escalation of the matter, should not the final decision on detailed design rest with Wiltshire Council?</b></p>	Yes. As the statutory body regarding planning matters, the final decision on the detailed design should rest with Wiltshire Council, particularly in such a sensitive site as this.
Ec.2	<b>Biodiversity, ecology and biodiversity</b> (including Habitats Regulations Assessment (HRA))		
Ec.2.1	Applicant Natural England	The landowners of Normanton Down reserve have stated that they would not agree to the erection of enhanced fencing to deter trespass	i. In the absence of agreement with the landowners regarding additional fencing, an alternative mitigation strategy would need to be devised in order that the Scheme can be HRA compliant.

	RSPB	<p>and to manage the risk of increased visitor pressures in the southern part of the World Heritage Site (ie south of the existing A303) impacting adversely on the breeding success of protected species such as the stone curlew.</p> <p><b>i. Please explain how this could be addressed, and what other measures could be put in place; and how such measures would be secured.</b></p> <p><b>ii. In the absence of such agreement in respect of enhanced fencing, what are the consequences in terms of any assumptions made in the HRA and ES that this solution would be successfully delivered.</b></p>	<p>This would need to be with agreement from Natural England. The current mitigation strategy appears to rely on measures such as additional fencing to protect Stone Curlews from disturbance. An alternative might mean provision of additional breeding plots giving birds greater opportunities, therefore not being restricted to plots where they are likely to be disturbed. This issue must be agreed in advance of determination of the Scheme in order to be HRA compliant.</p> <p>ii. The Council considers that in the absence of an agreement, the currently proposed mitigation is unsound (because it relies on that agreement) and cannot be included in the HRA as mitigation for the Scheme and so the Appropriate Assessment would not be able to conclude "no likely significant effect" or no significant adverse impact to the favourable conservation status of the Salisbury Plain SPA, therefore the Scheme is not compliant with the EU legislation and should not be determined until an alternative mitigation strategy is in place, one that has certainty of deliverability. See part i. for what this might need to include.</p>
CA.2	<b>Compulsory Acquisition, Temporary Possession and Other Land or Rights Considerations</b>		
<b>The accuracy of the Book of Reference, Land Plans and points of clarification</b>			

CA.2.19	Applicant	<p><b>Please confirm that the updated Book of Reference, as submitted for DL2 [REP2-007] is now complete and accurately sets out the various plots and interests.</b></p> <p><b>If not, please identify any inaccuracies that have come to light since DL2 and provide an update to the Book of Reference.</b></p>	<p>Wiltshire Council submitted comments and corrections at Deadline 3 (REP3-045) on the updated Book of Reference (REP2-008), which was submitted at Deadline 2. The Council understands that an updated Book of Reference which incorporates the corrections is to be provided by HE at Deadline 6.</p>
<b>Objections to the grant of powers of Compulsory Acquisition</b>			
CA.2.35	PFA Consulting on behalf of The Amesbury Property Company Limited (APC) and Classmaxi Limited (CML)	<p><b>What is the current state of progress of negotiations with the Applicant?</b></p>	<p>Wiltshire Council notes that ExA's questions about negotiations in relation to land required for the Allington Track Diversion are addressed to PFA Consulting on behalf of Classmaxi Ltd, the Applicant, and Countryside Properties on behalf of Beacon Hill Land Limited. However, the Council will be an active party in any agreements made with these two land owners. It believes that the ExA would find it helpful if the Council could reiterate the position made in the written submission (REP5-005) following the oral submission from the Council at the Compulsory Acquisition Hearing on 10th July, namely that the Council agrees in principle that the Council will be a party to tripartite agreements with Classmaxi Ltd and Beacon Hill Land Limited such that HE may be placed in a position to avoid Compulsory Acquisition with both parties.</p> <p>In essence, HE will be granted access to sufficient land to allow them to construct a carriageway of width 5.5m (with passing places to accommodate occasional very large transport associated with activity at Boscombe Down), together with adjoining verge area. The made carriageway will be dedicated (HA1980 s38) as all-purpose highway to the local highway authority, and the</p>

			<p>verge areas will be the subject of a public path creation agreement with the local highway authority.</p> <p>This is a very unusual arrangement which will preclude the local highway authority from exercising its powers under HA1980, s75, which would normally be available if the verges were adopted as all-purpose road. Whilst this inability to exercise s75 powers has potential implications should the local highway authority wish to widen the carriageway at some time in the future, if that situation is discounted the Council would have vested in it a road which would deliver all the normal features expected; it would look like a normal road, function like a normal road, have the safety characteristics to match those of a normal road, and provision will be made for statutory undertakers to occupy space as in a normal road.</p> <p>In the event the Council wanted to widen the carriageway at some point in the future, it would need to acquire the rights from the respective landowners to secure higher highway rights over the footpath(s).</p> <p>This arrangement will fulfil the ambition of the landowners to maintain their potential 'ransom' position in relation to third party land over which they currently hold a potential ransom (although the circumstances are different between the two landowners, owing to another potential road route over which Classmaxi current holds sole ransom position).</p> <p>In relation to this other parcel of land in the ownership of Classmaxi (the made but unadopted section of Equinox Drive, together with additional land to the south, part of a route referred to as the 'Boscombe Down Link'), the arrangement will be that the Council</p>
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			<p>will agree to adopt the made part of Equinox Drive as all-purpose road, together with sufficient land to provide a 4m wide new byway to link Equinox Drive to Byway AMES1.</p> <p>HE will, under the provisions of the heads of terms for the agreement, be responsible for delivering highway assets which are fit for adoption by the local highway authority, and to maintain that asset after completion for a period of not less than 12 months.</p>
CA.2.36	Applicant	<p><b>i. What is the current state of progress of negotiations with APC and CML to agree their proposed mechanism to avoid excessive land-take?</b></p> <p><b>ii. Please explain further how the proposed powers of Compulsory Acquisition of their land would comply with section 122(2) PA2008?</b></p> <p><b>iii. Why are the works proposed on CML's land necessary to achieve the scheme's objectives?</b></p> <p><b>iv. Why does the alternative course of action proposed by CML not represent a reasonable alternative to acquisition?</b></p>	See response to CA.2.35
CA.2.37	Countryside Solutions on behalf of Beacon Hill Land Limited	The Applicant's response to ExQ1 CA.1.46 asserts that the provision of safer Non-Motorised User connections would contribute to the Scheme's objectives of helping to conserve and enhance the WHS and provide a positive legacy for local communities [REP2-029].	See response to CA.2.35

		<p><b>i. Please comment on the Applicant’s justification for seeking the exercise of powers of Compulsory Acquisition in this respect.</b></p> <p>The Applicant indicates that it could agree not to implement its permanent acquisition powers over the land subject to it having been voluntarily dedicated as a public footpath by the landowner.</p> <p><b>ii. Please indicate whether that course of action represents an acceptable alternative solution and whether any agreement has been reached in this respect?</b></p>	
CA.2.42	Howard Smith on behalf of Mrs P M Sandell and Philip Sawkill	<b>Please indicate the progress of discussions as regards the provision of combine harvester access over National Trust owned land, outside of the Order limits.</b>	Wiltshire Council were asked to consider the use of PROW AMES 9a for part of this access, but to date have heard no more. It will be helpful to know if this option is still under discussion.
CA.2.43	Applicant	<b>Please indicate the progress of discussions as regards the provision of combine harvester access over National Trust owned land, outside of the Order limits for the benefit of Mrs P M Sandell’s agricultural business.</b>	See response to CA.2.42
<b>DCO.2</b>	<b>Draft Development Consent Order (dDCO)</b>		
<b>Part 1 – Preliminary</b>			

DCO.2.9	Wiltshire Council	<p><b>Article 3 – Disapplication of legislative provisions</b></p> <p><b>Please indicate whether sufficient Protective Provisions have been agreed for the protection of drainage authorities?</b></p>	Discussions have taken place between HE and Wiltshire Council and an amended dDCO incorporating appropriate and sufficient protective provisions for the protection of drainage authorities as agreed in the discussions has now been sent to HE.
<b>Part 2 – Works provisions</b>			
<b>Principal powers</b>			
DCO.2.14	Wiltshire Council National Trust Historic England	<p><b>Article 7 – Limits of deviation</b></p> <p><b>Please indicate whether there are any outstanding concerns, for example, in relation to whether provision should be made for consultation with stakeholders before the proposed LoD for the tunnel could be invoked or whether any other drafting amendments are sought in relation to Article 7?</b></p>	With regards to the vertical LoD, HE must ensure that the invert level of any infiltration feature is at least 1m above the top groundwater level (the maximum of modelled or recorded) to ensure effective operation. Furthermore, Wiltshire Council's archaeology service require consultation before the proposed LOD are invoked.
<b>Part 3 – Powers of acquisition and possession of land</b>			
DCO.2.26	Wiltshire Council National Trust Historic England	<p><b>Article 22 – Compulsory acquisition of rights</b></p> <p><b>Please indicate whether there are any outstanding concerns as regards the power to impose restrictive covenants on groundworks on land above the tunnel and the implications that might have for archaeological investigations in the WHS.</b></p>	There are still some outstanding concerns although it should be noted that the Council is currently still in discussion with HE regarding this.
<b>Schedule 2 – Part 1 – Requirements</b>			

DCO.2.33	Wiltshire Council	<p><b>Requirement 1 – Interpretation</b></p> <p><b>Please provide full reasons to support the request that REAC table 3.2a of the OEMP [REP4-020] should include an action/commitment for site drainage, similar to that which has been included in REAC table 3.2b for the main works.</b></p>	<p>This request has been included because of the potential for the preliminary works (such as site clearance) to change the drainage characteristics of the area and have an impact on flood risk.</p>
DCO.2.37	<p>Wiltshire Council</p> <p>National Trust</p> <p>Historic England</p> <p>English Heritage</p>	<p><b>Requirement 3 (1) and (2) – Preparation of detailed design etc</b></p> <p>The Applicant’s DL4 written summary of oral submissions put at the DCO hearing on 4 June 2019 [REP4-029] indicates that the updated OEMP includes further design commitments, design principles and a stakeholder consultation mechanism that has emerged from ongoing consultation with heritage stakeholders [REP4-020].</p> <p><b>i. Please provide an update on those ongoing discussions with the Applicant in relation to such matters and indicate whether it is agreed that the dispute mechanism proposed in section 4 of the updated OEMP would be adequate?</b></p> <p><b>ii. Should matters such as design principles, stakeholder consultation and dispute mechanisms be the subject of specific DCO Requirements or does their</b></p>	<p>i. Wiltshire Council and other key stakeholders continue to discuss the development of the OEMP, including the design principles and dispute mechanism, with HE. The Council’s position is unchanged in that it considers it inappropriate for HE to approve the CEMP and a number of other plans / documents.</p> <p>A number of drafts of the OEMP have been sent to the Council by HE and it is the Council’s understanding that a further revision of the OEMP will be submitted by HE into Examination shortly. To avoid potential confusion to the ExA and parties arising from amendments to the various drafts received from HE to date, the Council will provide detailed comments on this updated version of the OEMP at the next deadline following submission.</p> <p>ii. As set out in the Council’s comments on the dDCO submitted at Deadline 4 (REP4-039), Wiltshire Council considers that additional requirements are necessary to provide adequate safeguards. This included additional requirements for the CEMP, traffic monitoring</p>

		<p><b>inclusion within the OEMP provide adequate safeguards?</b></p> <p><b>iii. Are those design-related matters as set out in the OEMP sufficiently precise and detailed to be readily enforceable or are any further drafting changes sought?</b></p>	<p>and mitigation, highway lighting scheme, traffic management during tunnel closures, flood risk assessment, and approval of amendments to approved details. The Council also suggested expanded requirements for archaeology, implementation and maintenance of landscaping, traffic management, and details of consultation.</p> <p>iii. The Council will be seeking further drafting changes to the OEMP. As mentioned in point i. above, the Council understands that a revised version will be submitted into Examination shortly, upon which the Council will provide further comment.</p>
DCO.2.40	<p>Wiltshire Council</p> <p>National Trust</p> <p>Historic England</p> <p>English Heritage</p>	<p><b>Requirement 3 (1) and (2) – Preparation of detailed design etc</b></p> <p>The Applicant's response to ExQ1 DCO.1.81 (ii) recognises the need to give key stakeholders confidence that the detailed design of the scheme would be carried out appropriately [REP2-030].</p> <p><b>i. Please provide an update as regards the discussion of an appropriate mechanism to achieve the matters 1, 2 and 3 set out in that response and indicate whether any further changes to the updated OEMP [REP4-020] are envisaged in that respect.</b></p>	<p>i. Matters are still under discussion on an appropriate mechanism. As referenced in DCO.2.37 above, Wiltshire Council understands that a revised version of the OEMP will be submitted into Examination shortly. The Council will provide further comments on the document at the deadline following its submission.</p> <p>ii. The Council considers that there would be a benefit to having a specific design document secured by a DCO Requirement, as the design elements and design principles as drafted in the OEMP are very high level. In the event that it was proposed for this additional requirement to be approved by the Secretary of State, reference should be made to consultation with stakeholders in advance of a decision being</p>

		<p><b>ii. Please comment as to the merits of a specific design parameters document over and above the various design commitments and principles specified within the updated OEMP that would be secured by a specific DCO Requirement?</b></p>	<p>taken. This would allow the Council and other key consultees more of an influence over the detail of the design elements as they evolve through the different stages of the Scheme. The Council's view is that this would also mitigate against any dilution of intent between the OEMP stated principles, and the evolution of the CEMP by the Contractor.</p> <p>The Council acknowledges that it is the intention for the next version of the OEMP to include a new provision on design parameters. Following the Council's review of the revised OEMP, the Council will confirm whether the Council's current position as outlined above is still considered necessary.</p>
DCO.2.43	<p>Wiltshire Council National Trust Historic England English Heritage Environment Agency</p>	<p><b>Requirement 4 – Outline Environmental Management Plan</b></p> <p>The Applicant's DL4 written summary of oral submissions put at the DCO hearing on the 4 June 2019 [REP4-029], refers to the amended OEMP submitted at DL3 and the provision for consultation contained therein [REP3-006].</p> <p><b>Do the parties have any outstanding concerns in this respect and would the provision for consultation be satisfactorily secured by the dDCO Requirement 4?</b></p>	<p>The consultation commitments contained within the Development of Detailed Design section of the amended OEMP are noted. However, due to the importance of consultation with relevant stakeholders, the Council directs the ExA to its previously suggested amendments to Requirement 11, submitted as part of its comments on the dDCO at Deadline 4 (REP4-039).</p> <p>The Council considers these amendments are necessary so that stakeholders are provided a copy of the consultation report to ensure that feedback has been represented accurately. Furthermore, the current wording does not require HE to ensure that the consultation responses are reflected in their submission; they only need to state their reasons for not including them. The Council considers that the</p>

			<p>suggested amendments would address this crucial point.</p> <p>Furthermore, Wiltshire Council requests the ExA consider the Council's suggestion for the inclusion of an additional Requirement relating to the Construction Environmental Management Plan (CEMP). The rationale for the inclusion of this Requirement is detailed within the Council's Deadline 4 comments on the dDCO (REP4-039).</p>
DCO.2.46	Wiltshire Council	<p><b>Requirement 4 – Outline Environmental Management Plan</b></p> <p>For the CEMPs and certain other management plans 'the Authority' remains the approving body.</p> <p><b>Notwithstanding the provision for consultation with relevant stakeholders, please identify any outstanding concerns with this arrangement and, for the avoidance of doubt, list the plans that the Council considers it needs to approve itself before commencement of work giving reasons for that approach.</b></p>	<p>As previously indicated, the Council does not consider it appropriate for HE to be the approving body of the CEMP and other management plans / documents.</p> <p>Wiltshire Council has indicated below those plans which it considers necessary for the Council to approve before commencement of work, along with the rationale behind this.</p> <ul style="list-style-type: none"> <li>• The Detailed Archaeological Mitigation Strategy and all the Site Specific Written Schemes of Investigations (SSWSIs) to ensure the mitigation for the Scheme reflects the scale of impact on this highly significant archaeological landscape;</li> <li>• Emergency Preparedness and Response Plan – powers under the Civil Contingencies Act 2004;</li> <li>• Noise and Vibration Management Plan and Noise Insulation and Temporary Rehousing Policy - under noise nuisance powers of the Environmental Protection Act 1990;</li> </ul>

			<ul style="list-style-type: none"> <li>• Pollution Incident Control Plan - Powers under the Environmental Protection Act 1990 and the Civil Contingencies Act 2004;</li> <li>• Any contaminated land remediation proposals or schemes;</li> <li>• Traffic Management Plan (to include a Construction Workforce Travel Plan, a Site Access Plan, construction traffic routing details and a Site Travel Plan). To ensure suitability for and safety of users, and that the traffic impacts during construction do not unreasonably or disproportionately affect traffic conditions on the local roads, and potential unintended consequences for local economic interests e.g. trading in Amesbury;</li> <li>• Fencing design (both temporary and permanent) and its exact location within the WHS, where maintenance responsibility will pass to Wiltshire Council Rights of Way and Countryside;</li> <li>• Detailed design plans / drawings / specifications of all new public rights of way where maintenance responsibility will pass to Wiltshire Council Rights of Way and Countryside as the Local Highway Authority;</li> <li>• Landscape and Ecology Management Plan, as this sets out the requirements and responsibilities for the management of landscape and ecological features following the completion of the works. The LEMP is critical to the delivery of new landscapes e.g. the new chalk grassland and the mitigation identified within the ES;</li> <li>• Arboricultural Mitigation Strategy, as requested by the Wiltshire Council Arboriculture Officer, deals with the mitigation for trees to be removed and the</li> </ul>
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			<p>management and protection of those to be retained. Tree protection will need to be appropriate but have regard to the sensitivities of the WHS landscape;</p> <ul style="list-style-type: none"> <li>• Heritage Management Plan, to ensure the Council is satisfied with the level of detail and the decision-making process set out for the approaches;</li> <li>• Ground Movement Monitoring Strategy, to ensure that the Council is satisfied with the level of detail and the decision-making process set out for the approaches;</li> <li>• Soils Management Strategy, to ensure that the Council is satisfied with the level of detail and the decision-making process set out for the approaches. The Council will work with key stakeholders to develop best practice as appropriate to this Scheme.</li> </ul> <p>For the avoidance of doubt, the Council can confirm that it is content for HE to be the approving body of the following plans; provided that conscientious consultation is undertaken with the Council and other key stakeholders beforehand, as secured in the Council's proposed revised wording for Requirement 11 (REP4-039).</p> <ul style="list-style-type: none"> <li>• Water Management Plan (to include a Flood Risk Management Plan);</li> <li>• Groundwater Management Plan;</li> <li>• Site Waste Management Plan;</li> <li>• Materials Management Plan;</li> <li>• Tunnel Ventilation Strategy;</li> </ul>
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			<ul style="list-style-type: none"> <li>Invasive non-native species (INNS) Management Plan, provided that national policy and guidance is followed.</li> </ul>
DCO.2.51	Wiltshire Council National Trust Historic England	<p><b>Requirement 4 – Outline Environmental Management Plan</b></p> <p>There has been concern expressed by various parties as regards the lack of control over the design of lighting at the tunnel portals.</p> <p><b>Does the updated OEMP provide sufficient controls in that respect and/ or should the approval of the design of the lighting scheme specifically be the subject of a dDCO Requirement?</b></p>	<p>Lighting is specified in table 3.2b of the OEMP (D-CH9) but no detail apart from minimising spillage outside of the portals' footprint is provided. Whilst it is acknowledged that HE may prefer for additional details to be included within the OEMP rather than including them in the DCO itself, in order to avoid the risk for any subsequent amendment to the DCO being required if the design changes, the ExA is respectfully directed to Wiltshire Council's response to question DCO.2.66 below. The Council considers that, if the Requirement as set out under heading 'Highway Lighting Scheme' is accepted and included in the dDCO; the issue raised can be sensibly addressed by an approved discharge of that Requirement.</p>
DCO.2.52	Wiltshire Council National Trust Historic England	<p><b>Requirement 4 – Outline Environmental Management Plan</b></p> <p>The Applicant's DL4 written summary of oral submissions put at the DCO hearing on the 4 June 2019 [REP4-029] refers to the consultation which has taken place on the detailed design of the public rights of way within the WHS and the further details and commitments in that respect set out in the updated OEMP submitted at DL3 [REP3-006].</p> <p><b>i. Please indicate whether these design commitments and principles are agreed and considered to be sufficiently precise and</b></p>	<p>i. All that has been discussed to date are broad design principles. These have not been agreed as discussions on the OEMP continue. The OEMP needs to make a firm commitment to the provision of detailed design and construction drawings and specifications to be approved by Wiltshire Council as the local highway authority.</p> <p>ii. The impending revised OEMP is expected to provide additional information and detail of design commitments and principles. Once the Council has sight of this document, the Council shall be able to consider whether a further specific Requirement is necessary.</p>

		<p><b>comprehensive or do they require further amendment?</b></p> <p><b>ii. Does the OEMP, as secured by Requirement 4, provide a satisfactory means of achieving these aims or is it considered that a further specific Requirement in relation to this matter is necessary?</b></p>	
DCO.2.55	Wiltshire Council	<p><b>Requirement 5</b></p> <p><b>Please provide further reasoning to support the necessity for and reasonableness of the suggested amendments to this Requirement put forward in your Council's DL4 Review of the dDCO (Rev 2) [REP4-039].</b></p>	It is the view of Wiltshire Council that the additional wording requested for Requirement 5 will help to secure the delivery of key elements of the Archaeological Mitigation Strategy.
DCO.2.57	Environment Agency Wiltshire Council	<p><b>Requirement 7 – Contaminated land</b></p> <p><b>Please comment on whether any further drafting changes are necessary for this Requirement and/ or any additional Requirements are necessary in relation to contaminated land?</b></p>	The Council is supportive of the Environment Agency (EA) comments on Requirement 7 and their recommendations of changes to the wording. Requirement 7 needs to reference both the EA and Wiltshire Council as both have responsibilities under Part 2 (a) of the Environmental Protection Act 1990. The wording on MW-GEO2 in the OEMP provides additional wording which could be added to Requirement 7 in the dDCO.
DCO.2.59	Applicant	<p><b>Requirement 8 – Landscaping</b></p> <p>As previously noted, Requirement 8(2)(b) only specifies "<i>noise fences and walls</i>" as opposed to fences or walls designed for other purposes. The Applicant acknowledges that within the</p>	Wiltshire Council's view is that yes, the requirement should be amended to include all fences, walls and enclosures.

		<p>WHS, the location and appearance of fences could be important.</p> <p><b>Given the importance of safeguarding the WHS, should the landscaping works associated with all fences and walls within it not be subject to this Requirement in addition to the OEMP (D-CH14) in order to provide adequate protection for this area?</b></p>	
DCO.2.64	<p>Wiltshire Council                      National Trust                      Historic England                      English Heritage                      Environment Agency</p>	<p><b>Requirement 11 - Details of consultation</b></p> <p><b>Are there any outstanding concerns as regards the provision for consultation with relevant stakeholders and the means whereby this would be secured by the dDCO?</b></p>	<p>The consultation commitments contained within the Development of Detailed Design section of the OEMP are noted. However, due to the importance of consultation with relevant stakeholders, the Council directs the ExA to its previously suggested amendments to Requirement 11, submitted as part of its comments on the dDCO at Deadline 4 (REP4-039).</p> <p>The Council considers that these amendments are necessary so that stakeholders are provided a copy of the consultation report to ensure that feedback has been represented accurately. Furthermore, the current wording does not require HE to ensure that the consultation responses are reflected in their submission; they only need to state their reasons for not including them. The Council considers that the suggested amendments would address this crucial point.</p>
DCO.2.66	<p>Wiltshire Council</p>	<p><b>Additional Requirements</b></p> <p><b>i. Please provide further detailed reasons to support the inclusion of the suggested additional Requirements in the dDCO and</b></p>	<p>i. The Council set out a number of additional Requirement it considered necessary within its Comments on the dDCO submitted at Deadline 4. The Council has not replicated the suggested wording within this answer but has detailed the</p>

		<p><b>explain why, for example, the revised OEMP does not provide adequate safeguards for such matters?</b></p> <p><b>ii. Please explain further why the CEMP should not be left for the approval of Highways England rather than the Secretary of State or the Wiltshire Council in consultation with other key stakeholders?</b></p>	<p>rationale for each of the additional Requirements in order below.</p> <p><u>Construction Environmental Management Plan (CEMP)</u></p> <p>The CEMP is such a crucial document that the Council believes that a separate Requirement is warranted. The Council does not consider it appropriate for HE to approve the CEMP, which is why it is suggesting that the Secretary of State is instead the approver. The Council believes that it is appropriate to state that the authorised development must be constructed in accordance with the approved CEMP, as opposed to the approved OEMP, as details are likely to change between the OEMP and CEMP and therefore it is better for it to be based on the detailed design. Furthermore, there is no mention of the HEMP in the current drafting by HE. The Council believe that this is incomplete, as the lifecycle of the OEMP is OEMP to CEMP to HEMP, so the proposed drafting closes this loop.</p> <p><u>Traffic Monitoring and Mitigation</u></p> <p>For the detailed reasoning for additional Requirement, Traffic Monitoring and Mitigation, the Council has accepted the assumptions and estimates submitted as part of the forecasting of the traffic impacts associated with the proposed development. In many cases, the forecasting assumptions in a Transport assessment prove to be inaccurate and not representative of actual outcomes. The Council, as the authority for the local roads (non-</p>
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			<p>strategic network), wishes to understand the importance of between forecast and outturn, in order to assess whether or not any interventions are required, and how such interventions might be undertaken.</p> <p>Part (1) of the additional Requirement establishes a firm timeframe in which a monitoring and mitigation scheme should be established and agreed with the local highway authority.</p> <p>Part (2) of the requirement sets out a number of measures which it expects to be included in the scheme submitted for approval. The timeframe for the commencement of the monitoring (3 months after opening of the tunnels) is anticipated to be appropriate in relation to the establishment of near 'normal' conditions, following the inevitable local disruption, and the consequential impacts on drivers' behaviours and route decision taking. Point (i) seeks to establish an acceptable mechanism to determine what mitigation measures might be reasonably necessary, and how, when, by whom, and at which highway authority's costs.</p> <p>As previously stated the Requirement is similar in form to a Requirement included in the made DCO for the A14 Scheme in Cambridgeshire.</p> <p><u>Highway Lighting Scheme</u></p>
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			<p>Regarding the Highway Lighting Scheme, there is little reference in the OEMP in relation to street lighting on the Scheme. Whilst there is some considerable reference to site lighting (OEMP, MW-G29), the street lighting and traffic signals associated with the Scheme have not been comprehensively covered; D-CH7-CH12 (Table 3.2b of OEMP) make some general references to restrictions on street lighting, but do not offer any detail as to design. Also, Wiltshire Council considers that the ban on lighting under Green Bridge 4, between dawn and dusk, may have to be reviewed on safety grounds following operational experience. However, there are references within the submission relating to the principles around the issue of street lighting, including the need to minimise the extent of lighting beyond the tunnel and portal areas; to provide no street lighting at the Longbarrow junction, and to update lighting at the Countess junction to minimise light pollution. There is sparse information relating to the workings of the traffic signals controls at Countess junction (which will include signal controlled crossing facilities for non-motorised users on each of the merge and diverge slip roads connecting A345 and A303). There is also little information about the traffic signals installation proposed at the Longbarrow junction, nor about how the proposed Pegasus crossing on the A360, south side of the Longbarrow southern roundabout, will be operated, especially as to how it will be linked (if at all) to the junction stop-line traffic</p>
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			<p>signals. It is also unclear as to whether the Longbarrow traffic signals (which have been chosen to address road safety concerns about the chosen omission of street lighting at the junction) will be operational full time, or whether they will operate part time, e.g. dusk until dawn, during hours of darkness.</p> <p>HE have indicated an intention [Deadline 4 submission - 8.33 Letter about the Applicant's intention to submit a request for proposed scheme changes - REP4-038] to modify the de-trunking plans to include the Countess roundabout as part of the de-trunked works; this will mean that the roundabout part of the junction will in future be maintained by Wiltshire Council, who will also have responsibility for the street lighting.</p> <p>The Council and HE are currently seeking to secure a side agreement to the DCO which, inter alia, places the future responsibility with HE for maintaining the traffic signals controls at both junctions. Under the provisions of the draft agreement, HE will also have the controls over the signals timings with a view to ensuring the A303 mainline traffic is not adversely affected by any queuing at the junction; that agreement is not yet complete.</p> <p>At the Issue Specific Hearing, during discussion about the cross-over arrangements at Longbarrow to be used during planned closure of one tunnel (and contraflow arrangements</p>
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			<p>being put in place), there would be a need for temporary road lighting to be used for safety reasons; there has been no information included in any part of the submission, to the Council's knowledge, of what such lighting might comprise, and what impacts it might have. The Requirement sought will help to establish acceptable arrangements for both the permanent works and for planned maintenance when lighting will be required.</p> <p>The lighting required for the crossovers during tunnel closure may have direct impacts on sensitive receptors (residential property) in the vicinity of the Countess junction (which have not, to the Council's knowledge, been addressed as part of the considerations in relation to the Scheme), and is likely to include lighting on the A360 Longbarrow junction for traffic management at the Longbarrow end of the tunnels.</p> <p>Although Part (4) of the suggested Requirement excludes 'where temporarily required for maintenance', the Council considers that such lighting of the crossover points will be routine, and part of a traffic management scheme to be used in order to allow for maintenance to be undertaken; it is therefore lighting for traffic management and not lighting for maintenance. The Council considers that lighting for maintenance should be exempted from the condition because of its variable nature, which might only be determinable 'on the job'. The</p>
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			<p>Council would be happy, in order to clarify the condition, and to distinguish between lighting required directly or indirectly when maintenance is undertaken, to amend Part (4) to read:</p> <p>(4) Nothing in this requirement restricts lighting of the authorised development during its construction or where temporarily required for directly lighting areas where maintenance is being undertaken.</p> <p>As previously stated, the Requirement is similar in form to a Requirement included in the made DCO for the A14 Scheme in Cambridgeshire.</p> <p><u>Traffic Management during Tunnel Closures</u> Regarding Traffic Management during Tunnel Closures, in its submission to Deadline 4, HE in their document Deadline 4 Submission – ‘Appendix 2.2 Outline Environmental Management Plan (clean)’, the following text was included at MW-TRA12:</p> <p><b>Traffic Management during Tunnel Closures:</b> The main works contractor shall, prior to the handover of the works to The Authority, prepare, in consultation with Wiltshire Council, a Tunnel Closure Management Plan (TCMP) setting out, inter alia, the following;</p> <p>a) Procedures to be followed for the planned closure of a single bore, including use of</p>
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			<p>temporary signing, and advance information proposals.</p> <p>b) Procedures to be followed for unplanned closures of a single or both tunnel bores, either during or outside a planned closure, with particular reference to:</p> <ul style="list-style-type: none"> <li>i. method of control of access to the eastbound or westbound or both merge slips at Longbarrow or Countess junctions respectively.</li> <li>ii. Signage to be employed on the approved diversion route.</li> <li>iii. Measures to be taken at a regional/sub national level to alert drivers of A303 delays.</li> <li>iv. Requirements to liaise with Wiltshire Council’s Streetworks Team and the police.</li> </ul> <p>The text reflected earlier discussions between the Council and HE, and was included in good faith. However, on reflection, and in consideration of the following, the Council has sought to have the general principles enshrined in MW-TRA12 of the OEMP included instead as a Requirement:</p> <p>a) The Requirement relates only to measures to be addressed after the opening of the tunnels, at a time when the contractor (who, under the OEMP would have responsibility for the discharge of the Requirement) will have limited interest in the traffic operations and management in the area.</p>
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			<p>b) The Requirement has been recast so as to be in form such that it can meet the normal tests for a condition as set out in the NPPF.</p> <p>c) The TCMP may be subject to changes, post works completion, which would be the responsibility for HE to address with the Council, after the contractor has no contractual relationship with the Scheme.</p> <p>d) The positioning within the DCO of the Requirement would help those who were seeking information about how the tunnel closures work, to find easier links to the TCMP, rather than having to seek out secondary and tertiary documents at some future date after the Scheme has been completed.</p> <p>The Council has an on-going interest in the tunnel closures because of the use of the diversion route and the consequential implications for:</p> <ul style="list-style-type: none"><li>i) the local communities through which the diversion route passes and</li><li>ii) ii) the need to ensure that planned closures and works on the local roads network can be properly coordinated to ensure that delays are minimised for all road users.</li></ul> <p>Although planned tunnel closures are intended to be effected using contraflow in one tunnel whilst the other tunnel is closed for</p>
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			<p>maintenance, during the traffic management set-up works, and removals processes, the diversion route is likely to be used for one-way A303 diverted traffic.</p> <p><u>Flood Risk Assessment</u> The Council believes that this additional, separate Requirement is necessary given the flood risk sensitivity of the area. This wording proposed is similar to that which was included for the A14 scheme in its made DCO.</p> <p>ii. It is Wiltshire Council's view that HE should not be the body that both approves and implements the CEMP, as HE should not have final approval of a document written to implement their own Scheme. HE may have a vested financial interest in the cost implications of what might be rationale reasons for which the CEMP might otherwise be required to be e.g. amended in parts. The Council considers that HE should not be considered to be able to act with complete impartiality and objectivity.</p> <p>The Council would support the Secretary of State acting as approving authority rather than the Authority (currently HE), to bring an independent sign-off element to the approval process. The Council considers that it could also undertake this role in its capacity as Local Planning Authority.</p>
Fg.2	<b>Flood risk, groundwater protection, geology and land contamination</b>		

Fg.2.2	Applicant Environment Agency Wiltshire Council National Farmers' Union	<b>Flood risk and drainage</b> <b>i. How would the discharge of any water from the construction phase, including any dewatering of the tunnel arisings slurry be controlled to prevent flood risk and contamination?</b> <b>ii. Should this be explicitly addressed in the OEMP?</b>	i. The Council envisages that the discharge of any water into a watercourse will be controlled through the protective provisions, once agreed. The Council's view is that it is for the Environment Agency to comment on contamination. ii. Yes
Fg.2.3	Applicant Environment Agency Wiltshire Council	<b>Flood risk and drainage</b> <b>i. Given the Council's statutory role should MW-WAT3 be expanded to also require consultation and/ or agreement with the Council as well as the Environment Agency?</b> <b>ii. If so, should this just be in respect of part c or more generally?</b>	i. Yes ii. The Council considers that this is required more generally, and not just in respect of part c, in order to reflect Wiltshire Council's role as Lead Local Flood Authority and Land Drainage Authority.
Fg.2.4	Applicant Wiltshire Council	<b>Flood risk and drainage</b> <b>Please provide an update on the discussions following the Council's peer review of the latest FRA. Please set out any areas of disagreement. Within this response please set out the position in respect of the revised culvert design, the updated modelling outputs and the peak surface water flow onto the River Till flood plain and any associated mitigation.</b>	Wiltshire Council has reached agreement with the applicant on the peer review actions relating to the groundwater assessment. However, agreement has not yet been reached on the pluvial and road drainage actions. HE submitted a technical note (Appendix B) setting out their approach to the climate change allowances and exceedance routes. This has been reviewed by the Council's consultants, Atkins, and the latest comments / actions are outlined in the memo attached at Appendix C.
Fg.2.6	Applicant	<b>Flood risk and drainage</b>	i. The Council believes that the Flood Risk Management Plan should be listed in MW-G7 of

	Environment Agency Wiltshire Council	<p><b>i. Should the Flood Risk Management Plan be listed in MW-G7 of the OEMP and should the plan be developed in consultation with Wiltshire Council as well as the Environment Agency?</b></p> <p><b>ii. If not, why?</b></p>	<p>the OEMP and be developed in consultation with Wiltshire Council and the Environment Agency.</p> <p>ii. N/A</p>
Fg.2.7	Applicant Wiltshire Council	<p><b>Flood risk and drainage</b></p> <p><b>Please provide an update on the discussions about the need for the employment of a full-time drainage engineer during construction:</b></p> <ul style="list-style-type: none"> <li>• <b>What is the current status of the discussions?</b></li> <li>• <b>Set-out why this post is considered to be necessary (or not); and</b></li> <li>• <b>how this would be secured.</b></li> </ul>	<p>The Council is in negotiations with HE to secure this role as part of a Side Agreement, which is currently being negotiated between the parties.</p> <p>Due to the scale, complexity and duration of the Scheme (6 years), and the flood risk sensitivity of the area, Wiltshire Council requires a full-time drainage engineer in order to fulfil its flood risk management duties and ensure that it is appropriately consulted on flood risk matters.</p> <p>The Heads of Terms are intended to be agreed by Deadline 7 (9<sup>th</sup> August 2019) with the signed Side Agreement to be submitted into Examination for Deadline 8 (6<sup>th</sup> September 2019).</p>
Fg.2.8	Applicant Environment Agency Wiltshire Council	<p><b>Flood risk and drainage</b></p> <p><b>i. Please provide an update on the discussions about the climate change allowance for road drainage.</b></p> <p><b>ii. If the Applicant considers that a 30% allowance (with a 40% sensitivity check) is sufficient please respond to the Council concerns in respect of reliance on the freeboard, lack of allowance for any uncertainty and</b></p>	<p>i. HE submitted a technical note (Appendix B) setting out their approach to the climate change allowances for road drainage. This confirmed a remaining freeboard of 250mm for the 40% allowance and illustrated the exceedance routes. This has been reviewed by the Council's consultants, Atkins, and the latest comments / actions are outlined in table 3 of Appendix C. The Council requires evidence that a range of storm durations have been assessed and further clarification on the operation of DTA1.</p>

		<p><b>that climate change allowances may increase in the near future?</b></p> <p><b>iii. Could the Environment Agency set out its position on this matter?</b></p> <p><b>iv. Should MW-WAT12 be updated to include reference to climate change allowances in line with the comments made by the Environment Agency at DL4 [REP4-049]?</b></p>	<p>Discussions are ongoing to agree the remaining peer review actions.</p> <p>ii. For HE to respond.</p> <p>iii. For the EA to respond.</p> <p>iv. Yes, but climate change should also be applied to pluvial (surface water) and groundwater flooding, not just flood zone 3 (river flooding).</p>
Fg.2.9	Applicant Wiltshire Council	<p><b>Flood risk and drainage</b></p> <p>In the Relevant Representation from Wiltshire Council [RR-2365] a detailed concern was raised in respect of the Triangular Irregular Networks and the Light Detection and Ranging (paragraph 69 (a)). A specific response to this concern does not appear to have been provided.</p> <p><b>Can the Applicant respond to this matter and can the Council set out its current position in respect of this?</b></p>	<p>The Council considers that this point has been addressed. Relevant review comment from Atkins:</p> <p><i>"The model topography has been improved with better integration between the two data sets. There are some areas in which there are ridges within the data, however these are not thought to be significant."</i></p>
Fg.2.10	Applicant Wiltshire Council	<p><b>Flood risk and drainage</b></p> <p>In the Relevant Representation from Wiltshire Council [RR-2365] a detailed concern was raised that the model should be run for a longer simulation time (paragraph 69 (c)). A specific response to this concern does not appear to have been provided.</p> <p><b>Can the Applicant respond to this matter and can the Council set out its current position in respect of this?</b></p>	<p>The Council considers that this point has been addressed. Relevant review comment from Atkins:</p> <p><i>"The hydraulic model has been run for 15 hours to address this comment (25 hours for longer durations). This is sufficient to ensure the peak water levels are captured. The model 2D PO results show this (see below) although they also show some 'noise' within the results; this is considered insignificant. A check of the mass balance file shows that the maximum cumulative mass error is no more than -0.13% which is well within</i></p>

			<i>the required tolerance range (+/-1%) and is therefore reliable."</i>
Fg.2.11	Applicant Wiltshire Council	Flood risk and drainage  In the Relevant Representation from Wiltshire Council [RR-2365] a query was raised as to the ownership and maintenance responsibilities and regime for the proposed culvert. The long culvert has now been removed from the scheme, however, it is understood that shorter culverts would still be utilised.  <b>What would the ownership, maintenance regime and responsibilities be for any culverts and how would this be secured?</b>	From discussions with HE, it is understood that the culvert underneath the A303 would be owned and maintained by HE, whereas the culvert under the B3083 would be owned and maintained by Wiltshire Council. The Council's understanding is that such details will be confirmed in the Handover Environmental Management Plan (HEMP), but more clarity on where ownership details will be confirmed is welcomed.
Fg.2.12	Applicant Wiltshire Council	<b>Flood risk and drainage</b>  <b>i. Having regard to the DL4 submission from Wiltshire Council [REP4-039] please could the Applicant address matters of potential flood risk to the B3083?</b>  <b>ii. Could the Council set out its current position on these matters?</b>	i. For HE to respond.  ii. The latest comments are outlined in table 1 of Appendix C. Please see 1.4.5, fig 3.2 and 1B 5.4.8.
Fg.2.13	Applicant Environment Agency Wiltshire Council	<b>Flood risk and drainage</b>  <b>Having regard to the provision of the additional evidence submitted to the examination, please set out an updated assessment of the proposed development in respect of the flood risk policy, including</b>	Discussions with HE are ongoing to address the remaining peer review actions for road drainage and surface water. The outstanding actions relate to storm durations for hydraulic model runs and the operation of DTA1. Until the remaining actions are addressed, Wiltshire Council is unable to agree to full compliance with the NPSNN.

		<b>the application of the Sequential and Exception Tests, in the NPSNN?</b>	
Fg.2.14	Applicant Environment Agency Wiltshire Council	<p><b>Drainage</b></p> <p>The road drainage strategy would involve water from a sump within the tunnel being pumped beyond the eastern portal. The water would then either enter the highway drainage system or, if contaminated, be retained in an impounding sump for disposal by tanker. It appears that the switch between discharge or retention could either be automated or manual. The method is not secured (ie within the OEMP).</p> <p><b>i. What are the risks and benefits of each approach?</b></p> <p><b>ii. If a manual approach were chosen, would any time delay from a contamination incident to the manual override being initiated result in polluted water entering the wider road drainage system?</b></p> <p><b>iii. If an automated approach were chosen, what measures would be in place in the event that the automated system failed?</b></p> <p><b>iv. In view of the importance of this part of the drainage strategy, is it necessary to provide certainty on this within the OEMP?</b></p>	<p>i. Although the control strategy for the tunnel drainage is not outlined in the submission documents, HE have indicated in meetings that the control of the tunnel drainage will be automated. Wiltshire Council agrees with automated control of the tunnel drainage as this would be the most robust form of control and not reliant on human intervention.</p> <p>ii. There is a risk of pollution with any delay in manual operation.</p> <p>iii. Resilience measures would need to be agreed to ensure continued operation in the event of failure.</p> <p>iv. Yes, the Council considers that this should be specifically referenced within the OEMP.</p>

Fg.2.15	Applicant Environment Agency Wiltshire Council	<p><b>Drainage</b></p> <p><b>Given its significance should the impounding sump (and related infrastructure) be identified on the work plans and specified in the Works in Schedule 1 of the dDCO?</b></p>	Wiltshire Council believes that yes, it should be identified on the work plans and specified in the Works in Schedule 1 of the dDCO.
Fg.2.17	Applicant Environment Agency Wiltshire Council	<p><b>Flood risk and drainage</b></p> <p>At DL4 the Council suggested additions to MW-WAT14 [REP4-039].</p> <p><b>i. Given Requirement 10 would secure the details of the drainage system, why does the Council consider it necessary that this detail is set out in MW-WAT14? In responding, please provide a justification for each separate addition proposed.</b></p> <p><b>ii. Can the Applicant and the Environment Agency provide their views on whether the suggested additions are necessary?</b></p>	<p>In response to point i. of the question, Wiltshire Council's comments on MW-WAT14 are repeated below with reasons in bold in brackets.</p> <p>Surface water drainage (including road drainage) will be designed to;</p> <p>(a) Maintain pre-development runoff rates (peak flow and volume) for the 1, 30 and 100-year rainfall events; <b>(In the absence of firm national policy, this addition sets a specific target for the control of surface water runoff from the development and the associated return periods.)</b></p> <p>(b) Convey the 1 in 30-year rainfall event without causing flooding to any part of the site; <b>(This addition confirms the design return period for the below ground drainage system.)</b></p> <p>(c) Manage the 1 in 100-year rainfall event within the site without causing flooding to any building (including a basement) or in any utility plant susceptible to water (e.g. pumping station or electricity substation); <b>(This addition requires extreme rainfall not to cause flooding to properties.)</b></p> <p>(d) Manage flows from rainfall in excess of the 1 in 100-year rainfall event in routes that minimises the risks to</p>

			<p>people and property; <b>(This addition requires exceedance flows to be managed safely.)</b></p> <p>(e) Provide a 40% uplift in peak rainfall intensity to allow for climate change in accordance with Environment Agency guidance. <b>(This addition specifies the climate change allowances to be provided.)</b></p> <p>(f) Enable automated control of the tunnel drainage. <b>(This addition specifies the tunnel drainage control mechanism, as this is not clearly stated elsewhere in the submission documents and is not covered by the DMRB that HE works to.)</b></p>
Fg.2.18	Applicant Environment Agency Wiltshire Council	<p><b>Flood risk and drainage</b></p> <p>Requirement 10 of the dDCO requires that the drainage system is approved by the Secretary of State following consultation with the Council and the Environment Agency.</p> <p><b>Notwithstanding the recent addition of Requirement 11, should this be amended to secure the specific approval/ agreement of either or both the Environment Agency and the Council? Please provide detailed reasoning and, if you consider that this is necessary, why the current drafting of Requirements 10 and 11, along with the OEMP, are not adequate.</b></p>	<p>Wiltshire Council accepts the Secretary of State as the approving body, provided the Council is consulted appropriately. However, Requirement 11 in its current form in the dDCO does not make adequate provision for consultation.</p> <p>The current wording does not require HE to provide Wiltshire Council with a copy of the consultation report, enabling the Council to see if it's response has been represented accurately.</p> <p>More importantly, it does not require HE to ensure that the Council's consultation responses are reflected in their submission, only needing HE to state their reasons for not including them.</p>
Fg.2.19	Applicant Environment Agency	<p><b>Flood risk and drainage</b></p> <p><b>i. Could the Environment Agency and the Council set out what, if any concerns remain in respect of the updated Road Drainage Strategy</b></p>	<p>i. Discussions are ongoing to address the remaining peer review actions pertaining to the road drainage strategy. The latest comments are outlined in table 2 and 3 in Appendix C. Wiltshire Council require further evidence that a range of storm durations have been assessed and</p>

	Wiltshire Council	<p><b>[REP2-009 and REP2-010] and are requirements beyond those set out in DMRB necessary?</b></p> <p><b>ii. Could the Applicant set out its position on this matter and confirm whether a revised version is intended to be submitted?</b></p>	<p>clarification of the operation of DTA1. Also, the control of tunnel drainage is not covered by the DMRB, therefore further requirements are necessary.</p> <p>ii. For the Applicant to respond.</p>
Fg.2.20	Applicant Environment Agency Wiltshire Council	<p><b>Flood risk and drainage</b></p> <p><b>Please provide an update on the discussions in respect of the maintenance responsibilities for the drainage infrastructure?</b></p>	<p>Whilst negotiations continue on the Side Agreement between Wiltshire Council and HE, further discussions are required with regard to maintenance responsibilities for the drainage infrastructure. It is the intention for the signed Side Agreement to be submitted into Examination at Deadline 8.</p>
Fg.2.21	Applicant Environment Agency Wiltshire Council	<p><b>Drainage, groundwater and contamination</b></p> <p>Reliance would be placed on natural attenuation of any contaminants that pass through the filtration material in the drainage treatment areas. Groundwater levels are relatively high in the area.</p> <p><b>i. What degree of confidence is there that this method is sufficient and how conservative is the design?</b></p> <p><b>ii. What water quality standards would be applied and how would meeting these be monitored?</b></p>	<p>i. Modelled groundwater levels were used by the flood and drainage teams to assess the effects of peak groundwater levels on drainage infrastructure and flood storage. HE has confirmed that this is a precautionary approach as the modelled peak levels are considerably higher than the recorded peak levels.</p> <p>ii. The water quality standards are prescribed in The Private Water Supplies (England) Regulations 2016 and Private Water Supplies (England) (Amendment) Regulations 2018. These are monitored by taking water samples and analysing them for a suite of bacteriological and chemical parameters. Ongoing groundwater monitoring and modelling should inform the detailed design and construction plan. This is secured through commitment MW-WAT10 (Groundwater Management Plan) in the Outline Environmental</p>

			Management Plan (Environmental Statement Appendix 2.2), that allows for an update to the groundwater risk assessment for the final design and construction plan, and a programme of groundwater level monitoring.
Fg.2.22	Applicant Environment Agency Wiltshire Council	<p><b>Groundwater monitoring</b></p> <p>Groundwater monitoring (for water levels and quality) is intended to take place during construction and for 5 years post construction.</p> <p><b>i. For the construction phase this is dealt with in MW-WAT10 of the OEMP. Is it intended that the post construction monitoring is secured via the HEMP? Is this sufficiently clear to ensure that adequate post construction monitoring is secured, or should the 5-year period be explicitly stated?</b></p> <p><b>ii. In addition to the Environment Agency, should Wiltshire Council also be consulted on the Groundwater Management Plan?</b></p> <p>It appears that the principle of on-going monitoring has been agreed between the Applicant, the Environment Agency and Wiltshire Council, but that specific proposals have not yet been agreed.</p> <p><b>iii. To what extent would it be necessary to agree specific details at the pre-consent stage? If this is required, how would this be secured? Are the</b></p>	<p>i. It is Wiltshire Council's understanding that all monitoring (including the post-construction monitoring) is secured through MW-WAT10 c). Wiltshire Council proposed a period of 5 years' post-construction as that was what was agreed verbally at meetings, however it is accepted that the period could instead be agreed with Wiltshire Council and the EA during the development of the Groundwater Management Plan (GMP).</p> <p>ii. Yes, Wiltshire Council should be consulted on the GMP. There have been detailed discussions between Wiltshire Council, the EA and HE with regards groundwater monitoring, but the details have not yet been agreed.</p> <p>iii. The existing measures in the dDCO are not sufficient. See suggested changes to Requirement 4 (OEMP) and Requirement 11 (details of consultation) in the answers to DCO.2.43, DCO.2.46 and DCO.2.66 above.</p> <p>iv. Landowner consent would need to be obtained as part of agreeing the ongoing monitoring programme.</p>

		<p><b>existing measures in the dDCO, the OEMP and the requirement for the production of a HEMP sufficient to ensure that the detailed proposals would be secured/ agreed appropriately?</b></p> <p><b>iv. What processes would be put in place in respect of landowner consent for the on-going monitoring?</b></p>	
Fg.2.24	Applicant Wiltshire Council	<p><b>Groundwater monitoring and contamination</b></p> <p>A number of private water supplies are used for drinking water.</p> <p><b>i. In view of this is it necessary that monitoring is put in place to ensure compliance with drinking water standards (for example by expanding MW-WAT15 in the OEMP)?</b></p> <p><b>ii. If it is the Applicant's view that this is not necessary, please clearly set out the reasons and any risk assessment which has been carried out.</b></p> <p><b>iii. If this is considered to be necessary how should this be secured, for example is the wording suggested by the Council at DL4 to insert into the OEMP appropriate?</b></p> <p><b>iv. If monitoring is necessary, what frequency would be required to mitigate any risks appropriately?</b></p>	<p>i. The Council supports proactive monitoring as specified in MW-WAT15 to ensure the quality of all drinking water supplies both public and private.</p> <p>ii. The nature and extent of the main works for the construction of the project presents risks from accidental spillages etc. and changes to the hydrogeology in the area. Risk assessments should be carried out of private water supplies in accordance with the Private Water Supplies (England) Regulations 2016 and Private Water Supplies (England) (Amendment) Regulations 2018.</p> <p>iii. The Council supports the Deadline 4 wording.</p> <p>iv. Annual sampling is the minimum required but increased frequency would be expected if unknown contamination is encountered or accidental spillages occur.</p> <p>v. The supply owners are responsible under the regulations for taking remedial actions.</p>

		<p><b>v. In the event that any samples failed to meet drinking water standards what reporting measures would be put in place and how would any remediating action be secured?</b></p>	<p>Reporting measures would be between the supply owners and the local planning authority. Remedial / enforcement actions can be required by the local council. However, if failures occurred and they can be traced to the Scheme, private action may be taken by the supply owner against the contractors who are carrying out the works.</p>
Fg.2.27	Applicant Wiltshire Council	<p><b>Contamination</b></p> <p>At DL4 the Environment Agency has suggested that Article 13 in the dDCO be amended to include reference to ground water and dissolved pollutants [REP4-049].</p> <p><b>Please set out your position on this matter with reasons?</b></p>	<p>The Council supports the Environment Agency's proposed amendment to Article 13 of the dDCO in order to safeguard local ground water supplies which is particularly important to protect the water abstraction points and private water supplies in the area of the Scheme.</p>
Fg.2.28	Applicant Environment Agency Wiltshire Council	<p><b>Contamination</b></p> <p>Requirement 7 deals with contamination found during construction.</p> <p><b>i. Is it necessary to also secure pre-commencement investigation and risk assessment of potentially contaminated land to minimise the risk of contamination being discovered during construction? Please provide reasons for your answer.</b></p> <p><b>ii. If this is necessary how should this be secured (ie an additional Requirement)?</b></p>	<p>i. Pre-commencement investigation is necessary to ensure that any contractors working on the Scheme are aware of areas of pre-existing contamination to avoid creating a pathway between the source and a receptor.</p> <p>ii. This could be achieved through the OEMP, which already refers to Requirement 7 of the DCO, which could be strengthened to provide that site works cease where contamination of found.</p> <p>iii. For HE to respond.</p>

		<p><b>iii. It appears that some investigation is ongoing, can the Applicant provide an update on this and whether it is likely to be completed and be able to be reviewed adequately during the examination?</b></p>	
Fg.2.29	Applicant Environment Agency Wiltshire Council	<p><b>Contamination</b></p> <p><b>i. Should Requirement 7 be updated to clarify that, if contaminated land and/or groundwater is found works in that area should cease until the risk assessment is completed and (if necessary) the remediation is approved?</b></p> <p><b>ii. If not, why?</b></p>	<p>i. Strengthening Requirement 7 as suggested in Fg.2.28 above would be supported.</p> <p>ii. No comment.</p>
Fg.2.30	Applicant Environment Agency Wiltshire Council	<p><b>Contamination</b></p> <p><b>i. Should MW-WAT2 and MW-WAT7 in the OEMP also require consultation with Wiltshire Council in respect of the Water Management Plan?</b></p> <p><b>ii. If not, why?</b></p>	<p>The Council would support the requirement to consult with the Council for MW-WAT2 and MW-WAT7 to ensure its role in relation to parts 1, 2A and 3 of the Environmental Protection Act 1990 is fulfilled.</p>
Fg.2.31	Applicant Environment Agency Wiltshire Council	<p><b>Contamination</b></p> <p><b>Should MW-GEO1 in the OEMP be amended to also consider human health and environmental impacts of the scheme and contamination [REP4-020]?</b></p>	<p>MW-GEO1 currently refers to controlling risks to humans which the Council takes as including human health. The Council recommends extending protection of the environment which is supported by the CIRIA C741 publication.</p>

Fg.2.32	Applicant Environment Agency Wiltshire Council The Stonehenge Alliance	<p><b>Contamination and groundwater flow</b></p> <p>In respect of the tunnel boring methodology and the potential for there to be a risk of pollution or impediment to groundwater flow the Environment Agency notes that OEMP: PW-G1, MW-G5, MW-G7, MW-WAT8, MW-WAT9, MW-WAT 10, MW WAT11, and MW-WAT14 provide <b>some</b> control of these activities (emphasis added) [REP4-020].</p> <p><b>Are the controls adequate and, if not, what additional controls are required to mitigate any risks appropriately?</b></p>	It is considered that the OEMP contains sufficient mitigation, which additionally includes proactive monitoring, as specified in MW-WAT15 to protect the quality of all drinking water supplies both public and private.
Fg.2.33	Applicant Environment Agency Wiltshire Council	<p><b>Dewatering</b></p> <p>The OEMP now commits to the use of closed face tunnelling techniques. This should prevent the risk of large-scale dewatering being required [REP4-020].</p> <p><b>i. To what extent was small-scale dewatering assessed in the Environmental Statement and does it reflect the worst-case scenario in terms of dewatering?</b></p> <p><b>ii. Should a limit on the level of smaller-scale dewatering be secured as part of the DCO to ensure that dewatering, beyond that assessed, does not take place?</b></p> <p><b>iii. Is the approval/ permitting procedure sufficient to ensure any</b></p>	<p>i. For HE to respond to.</p> <p>ii. It is Wiltshire Council's view that setting an upper limit for dewatering would be impractical as it would depend on the local circumstances (i.e. size of discharge in relation to the amount of flow in the receiving watercourse etc.).</p> <p>It is Wiltshire Council's understanding that the EA will retain their abstraction licencing powers. As part of assessing applications, the EA will consider the impact and could impose an upper limit at that point. Wiltshire Council welcomes the EA's comments on this point.</p> <p>iii. From Wiltshire Council's perspective, the discharge of any water from dewatering into a watercourse will be controlled through the protective provisions, once agreed.</p>

		<b>required dewatering is adequately controlled?</b>	
Fg.2.34	Environment Agency Wiltshire Council	<b>Dewatering</b> <b>Are there any residual concerns in respect of potential dewatering and to what extent would the permitting regime deal with these?</b>	Residual concerns are around Wiltshire Council agreeing adequate protective provisions with HE within the required timescales.
Fg.2.35	Applicant Wiltshire Council	<b>Disapplication of legislation and protective provisions</b> <b>i. Please provide an update on discussions in respect of the disapplication of the Land Drainage Act and the related Protective Provisions.</b> <b>ii. Please outline any areas of disagreement clarifying why any residual concerns remain.</b>	i. Discussions have taken place between HE and Wiltshire Council and an amended dDCO incorporating appropriate and sufficient protective provisions for the protection of drainage authorities as agreed in the discussions has now been sent to HE.  ii. See response to i. above. An amended schedule 11 part 3 of dDCO (rev 3) has been sent to HE. If this is agreed, the areas of disagreement are expected to be resolved.
Fg.2.37	Applicant Environment Agency Wiltshire Council	<b>Soils management strategy</b> In MW-G7 the OEMP states that the main works contractor will consult with Wiltshire Council, the Environment Agency (and others) on those aspects of the various specified plans relevant to their functions [REP4-020].  In respect of the Soils Management Strategy it appears to be unclear who would be consulted. <b>Please provide clarity on this, for example would this include Wiltshire Council. Should this be more clearly stated in the OEMP?</b>	Wiltshire Council expects to be consulted on the Soil Management Strategy. There are potential landscape (visual) implications arising from storage mounds. The Council is also interested in the development of best practice for the development of chalk grassland using the tunnel waste. Additional benefits for wildlife could include seeding storage mounds with nectar rich herb, which could reduce dust and help reduce the development of pernicious weeds.  The consultation with Wiltshire Council is also relevant in relation to the preparation of the Groundwater

			Management Plan, as it is the statutory authority leading on groundwater flood risk management.
Fg.2.41	Wiltshire Council	<p><b>Blick Mead hydrogeology</b></p> <p><b>How would general post construction monitoring of water levels alleviate concerns of the potential impact on the Blick Mead site if there is no express requirement to monitor this site explicitly in relation to the impact on archaeological remains?</b></p>	<p>There are no legitimate concerns from the Council's archaeology service that:</p> <ol style="list-style-type: none"> <li>There will be any changes in the water table from the Scheme, or;</li> <li>That any changes in water levels will have an adverse impact on the archaeological layers at Blick Mead.</li> </ol> <p>The Council's archaeology team therefore do not require any monitoring.</p>
Fg.2.44	<p>Applicant</p> <p>Environment Agency</p> <p>Historic England</p> <p>Wiltshire Council</p> <p>Mark Bush on behalf of the Blick Mead Project Team</p> <p>The Council for British Archaeology</p>	<p><b>Blick Mead hydrogeology</b></p> <p>The extent of the archaeological remains at the Blick Mead site is unknown.</p> <p><b>To what extent should this influence any monitoring at the site both in terms of establishing the baseline and then ongoing monitoring?</b></p>	<p>The view of the Council's archaeology service is that this does not impact monitoring as it is not anticipated that the water levels will change as a result of the Scheme.</p>

Fg.2.47	Applicant Environment Agency Historic England Wiltshire Council	<p><b>Blick Mead hydrogeology</b></p> <p>In the Environment Agency's response to DL4 it was noted that there is potential for the final design to deviate from that assessed to date and, if this were to occur, then further assessment of risk in respect of the magnitude and extent of impacts on groundwater would be required [REP4-049].</p> <p><b>If this were to occur what measures would there be to ensure that any further risk assessment would take account of the potential to impact on the archaeology at the Blick Mead site?</b></p>	The Council's archaeology service would expect to be consulted by the EA before any licence was issued.
Fg.2.48	Applicant Environment Agency Historic England Wiltshire Council	<p><b>Blick Mead hydrogeology</b></p> <p>Please provide a detailed response to the submissions made by Mark Bush on behalf of the the Blick Mead Project Team [REP4-047].</p> <p><b>Please have particular regard to the tiered assessment and whether it would be necessary for this to be advanced ie to tier 4?</b></p>	The Council's archaeology service considers that no further assessment is required.
Fg.2.49	Applicant	<p><b>Blick Mead hydrogeology</b></p> <p>Please provide an assessment/ evidence as to what degree the site is wetted from perched water and what are the implications of this for the effect of the development on the archaeological remains?</p>	The Council's archaeology service considers there will be no impact on Blick Mead, whether there is perched water or not.

<b>HW.2</b>	<b>Health and wellbeing</b>		
HW.2.1	Applicant Historic England ICOMOS Wiltshire Council	<p>Loss of the casual encounter with the Stones as you pass on the A303 is referenced by numerous RRs as an important part of the cultural experience of the area. The WHS Management Plan recognises there has been routes through the landscape for significant periods of time and the location of the road has opened this up to artists, poets, musicians etc which has further developed the cultural significance of the site.</p> <p><b>i. Whilst there will remain views from rights of way would you agree the casual encounter by the commuter will be lost?</b></p> <p><b>ii. What significance do you consider this has on the OUV for the WHS?</b></p>	<p>i. Yes, the Council's view is that the casual encounter will be lost for vehicular traffic.</p> <p>ii. The Council considers that this has no impact on the OUV for the WHS.</p>
HW.2.2	Applicant Wiltshire Council Historic England	<p><b>How have the competing desires of the Druids who wish to have any human remains found on the site reinterred and archaeologists desire to study, understand and display those remains been considered and addressed? [REP3-012, REP2-003 (Article 16), APP-296, REP2-032 (HW.1.17)]</b></p>	<p>Having human remains reinterred is not desirable from an archaeological perspective and this not an option that the Council's archaeology service would consider.</p> <p>Any human remains to be found in mitigation will be in areas where the road is going and therefore any remains will not be able to be placed or left in situ.</p>
<b>LV.2</b>	<b>Landscape and visual</b>		
LV.2.6	Applicant	<b>Landscaping scheme</b>	i. For HE to respond.

	Wiltshire Council Historic England	<p><b>i. Why, in Requirement 8 of the DL4 dDCO, is the submission and approval of the overall landscape scheme limited to Work No 4 and the WHS [REP4-018]?</b></p> <p><b>ii. Are WILTSHIRE COUNCIL and Historic England content that only consultation, rather than agreement, should be in place prior to submission to the SoS for approval?</b></p>	<p>ii. Whilst the Council would prefer for agreement to be secured rather than consultation, in its suggested amendments to this Requirement submitted at Deadline 4 (REP4-039), it was conscious of previous DCO wording on made Orders which generally specified consultation with the local planning authority.</p>
<b>Ns.2</b>	<b>Noise and vibration</b>		
Ns.2.1	Applicant The Stonehenge Alliance Wiltshire Council	<p><b>Tranquillity</b></p> <p>The issue of tranquillity appears to remain in dispute in that the visitors to the WHS and particularly the Stones would appear to influence the degree of tranquillity at the Stones and in the vicinity of the Stones. As a consequence, the degree of effect from the current road is arguably reduced and the degree of benefit from its removal in respect of tranquillity in the area of the Stones may be regarded as less significant.</p> <p><b>Do you consider that tranquillity will be achieved at the Stones as a consequence of the scheme?</b></p>	<p>It is the Council's view that the Scheme will deliver tranquillity benefit at the Stones due to the removal of the traffic, with its associated noise and visual impact. Visitors will continue to impact on tranquillity but the Scheme is expected to deliver an improvement.</p> <p>The Council considers that there is a qualitative difference between the disturbance to tranquillity generated by visitors, compared to the intrusive and unrelated disturbance created by modern traffic noise. Traffic also creates movement that has no connection to the enjoyment of the Stones and that intrudes on the enjoyment of the surrounding landscape.</p>
Ns.2.2	Wiltshire Council	<p><b>Tranquillity</b></p> <p>The NPPF at paragraph 180 states:</p>	<p>i. There are no areas within the confines of the DCO application that are classed as tranquil in the Wiltshire Core Strategy, which is the Development Plan for the area. This is largely due to the fact that the existing use of the A303</p>

		<p>“Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:</p> <p>a) mitigate and reduce to a minimum, potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;</p> <p>b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason....”</p> <p><b>i. In light of the above does Wiltshire Council consider any areas within the confines of the DCO application as tranquil such that they would be classed as such in any Local Plan document?</b></p> <p><b>ii. What is the Wiltshire Council’s view of tranquillity in respect of the current WHS?</b></p> <p><b>iii. What is Wiltshire Council’s view of tranquillity in respect of the current River Till Valley?</b></p>	<p>disturbs the tranquillity of the area, which is thus not an area that has remained relatively undisturbed by noise, which is a criteria for identifying and protecting such areas in paragraph 180 of the NPPF.</p> <p>However, Core Policy 51 Landscape requires development to be informed by the suite of Landscape Character Assessments (LCA’s) and identifies at point vii the need to conserve and where possible enhance tranquillity and protect against light pollution, noise and motion. Much of Wiltshire is designated AONB with high levels of tranquillity. Whilst there has been no tranquillity mapping undertaken by Wiltshire Council for areas outside of the AONB, the local landscape character assessments do pick up areas of tranquillity. In terms of the DCO application, the A303 is named throughout the suite of LCAs as a source of noise and motion contributing to a reduction in tranquillity along its length.</p> <p>ii. The Council recognises that tranquillity in the WHS needs to be enhanced, as the current proximity and use of the A303 has a negative impact on this aspect of the WHS due to the traffic and associated noise and visual impact.</p> <p>The WHS lies in landscape character area D3 Larkhill Chalk Downland (Salisbury District LCA February 2008), which states: ‘the sense of tranquillity is generally strong throughout much of the area, however this is disrupted by military</p>
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		<p><b>iv. What is Wiltshire Council's view of any impact on tranquillity in respect of the Proposed Development?</b></p>	<p>activities and traffic noise on the A303 and A345 road corridors'.</p> <p>The Council supports the Stonehenge and Avebury WHS Management Plan that has as part of its vision, the need to provide a tranquil rural setting for the WHS and its archaeology. Core Policy 51 of the Wiltshire Core Strategy seeks to ensure that any development in valued landscapes, including the WHS, should enhance tranquillity, including protection from light pollution, noise and motion.</p> <p>Although visitors will continue to impact on tranquillity, the Council considers that the Scheme will meet this objective in relation to the WHS.</p> <p>iii. The Till Valley is described in character area A1: 'Relatively strong sense of tranquillity throughout the valley' and 'Historic village of Winterbourne Stoke towards the centre of the area, where the busy A303 road corridor crosses the valley and introduces a source of noise and movement'.</p> <p>The River Till valley is not designated as part of a tranquil landscape, and whilst the Scheme will inevitably introduce more noise and disturbance to the valley, this has to be balanced against the significant reduction in noise and disturbance in the settlement of Winterbourne Stoke. The removal of through traffic on the A303 from this village will enable the heritage assets of the listed buildings and conservation area in the village to</p>
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			<p>be enjoyed in significantly greater tranquillity than currently exists.</p> <p>iv. Overall, the Council's view is that the proposed development will have a beneficial impact on tranquillity, particularly in relation to the enhancements that it will deliver to the tranquillity of the WHS and the village of Winterbourne Stoke. The different approach to the illumination of the Longbarrow junction will also be an improvement in terms of tranquillity, reducing light pollution. It should be noted that there would be an adverse impact on tranquillity at the western part of the Scheme at the western end of the WHS and where the viaduct crosses the River Till.</p>
Ns.2.4	Applicant Environment Agency Wiltshire Council	<p><b>Piling</b></p> <p>i. <b>Has the terminology for non-impact piling now been agreed?</b></p> <p>ii. <b>Has this been consistently set out through the documentation to ensure consistency at the River Till, Countess roundabout or other areas within the site where piling may occur?</b></p>	<p>i. Yes. The agreement with HE to non-impact piling at both the River Till and Countess Junction is set out in the Statement of Common Ground (SoGC) (REP4 – 022) page 3-63.</p> <p>ii. Yes. This is referred to in the OEMP at MW-BOI3 in relation to the River Till and D-NOI4 in relation to Countess junction. In addition, MW-G9 requires risk assessments to be carried out at both the Countess Junction and the River Till valley with regard to piling.</p>
Ns.2.5	Applicant Wiltshire Council	<p><b>Noise</b></p> <p>Paragraph 5.195 of the NPSNN sets out three tests for assessing National Infrastructure Projects. The third bullet states:</p>	<p>There are no residential properties to the north of the River Till so there is no noise impact on residents in that area, although there may be a slight adverse impact on users on the public rights of way in the area, however, these are viewed as transient receptors. As such, it is</p>

		<p>"contribute to improvements to health and quality of life through the effective management and control of noise, where possible."</p> <p>To date no barrier is proposed on the northern side of the viaduct crossing the River Till and the specification for the southern barrier is not currently set out.</p> <p><b>Please advise how you consider this meets this requirement of the NPSNN and achieve where possible effective management and control of noise.</b></p>	<p>not considered essential to require HE to install a barrier to the northern edge of the viaduct.</p> <p>The proposed barrier to the southern edge of the viaduct will have a beneficial impact on one residential property, namely Foredown House, and a continuous barrier connected to the earthworks at either end of the viaduct is considered to provide adequate protection. It also meets the requirements on NPSNN at this location in the context on sustainable development.</p> <p>The Council's Peer Review concluded that the proposed mitigation identified in the Environmental Statement was suitable and sufficient. The specification of the barrier at the viaduct will be determined at the detailed design stage.</p>
Ns.2.6	Applicant	<p><b>Vibration effects on archaeology</b></p> <p>i. <b>Is it reasonable to say that the vibration analysis has been carried out to assess impacts upon human health and buildings, but not been specifically designed to assess impacts on archaeology bar the analysis of potential impacts on the Stonehenge monument itself?</b></p> <p>ii. <b>Can you point out where the specific archaeological analysis in respect of vibration is within the ES?</b></p>	<p>Wiltshire Council's archaeology service notes that this is still under discussion.</p>
Ns.2.7	Historic England Applicant	<p><b>Vibration effects on archaeology</b></p>	<p>Wiltshire Council's archaeology service does not have any particular concerns about the impact of vibration and settlement on archaeology, but notes that the onus is on HE to prove that there will not be an unacceptable</p>

	<p>Wiltshire Council</p> <p>The Council for British Archaeology</p> <p>ICOMOS</p> <p>Blick Mead Project Team</p>	<p>In light of the comments made by the different parties to date can you advise on the latest position in respect of:</p> <ul style="list-style-type: none"> <li><b>i. An agreed methodology for measuring vibration and what standards could be used to safeguard archaeological remains.</b></li> <li><b>ii. The level at which significant effects might occur.</b></li> <li><b>iii. How any vibration will be monitored to protect archaeology.</b></li> <li><b>iv. Mechanism/ mitigation to avoid potential adverse effects including any agreed positions of monitoring locations.</b></li> </ul>	<p>level of movement. At present, there is no agreed parameters or thresholds for this as such.</p> <p>In response to the specific questions posed, the Council's position is as follows:</p> <ul style="list-style-type: none"> <li>i. The Council would suggest that evaluation techniques and methodologies specified in a number of British Standards may be appropriate. These include BS 7385-2:1993 Evaluation and measurement for vibration in buildings, BS ISO 4866:2010 Mechanical vibration and shock - vibration of fixed structures and BS 5228:2009 +A1:2004 - Code of Practice for noise and vibration on construction and open sites.</li> <li>ii. No comment.</li> <li>iii. Monitoring could be carried out using the British Standards quoted in response to point i. above. The Council is currently in discussion with HE on a programme of ground movement monitoring, which HE will put in place for the duration of the construction programme. The Council will be able to comment further on this at a later stage once the details are agreed and finalised.</li> <li>iv. No comment.</li> </ul>
Ns.2.8	<p>Historic England</p> <p>Applicant</p> <p>Wiltshire Council</p>	<p><b>Settlement effects on archaeology</b></p> <p>In light of the comments made by the different parties to date can you advise on the latest position in respect of:</p>	<p>See response to Ns.2.7</p>

	<p>The Council for British Archaeology ICOMOS Blick Mead Project Team</p>	<ul style="list-style-type: none"> <li><b>i. An agreed methodology for measuring settlement, and what standards could be used to safeguard archaeological remains.</b></li> <li><b>ii. The level at which significant effects might occur.</b></li> <li><b>iii. How the settlement will be monitored to protect archaeology.</b></li> <li><b>iv. Mechanism/ mitigation to avoid potential adverse effects including any agreed positions of monitoring locations.</b></li> </ul>	
<b>WM.2</b>	<b>Waste and materials management</b>		
WM.2.1	<p>Applicant Environment Agency Wiltshire Council</p>	<p><b>Site Waste Management Plan and Materials Management Plan</b></p> <ul style="list-style-type: none"> <li><b>i. Should the Site Waste Management Plan and the Materials Management Plan be prepared in consultation with either Wiltshire Council and/ or the Environment Agency? Please provide reasons for your answer.</b></li> <li><b>ii. Both these plans are listed in MW-G7 where there is a general requirement to consult with the relevant bodies in respect of the areas relevant to their functions. However, if required, should this consultation be explicitly set out (for example in MW_MAT1</b></li> </ul>	<ul style="list-style-type: none"> <li>i. The Site Waste Management Plan responds to a development plan policy in the Wiltshire and Swindon Waste Core Strategy – policy WCS6 on waste reduction and auditing. It would therefore be appropriate for it to be prepared in consultation with Wiltshire Council. The Materials Management Plan is to be produced under the CL:AIRE Code of Practice, which involves review of the relevant documents by a Qualified Person and the provision of a declaration to the Environment Agency as the authority responsible for enforcing waste management legislation. Accordingly, the Materials Management Plan should be prepared in consultation with the Environment Agency.</li> <li>ii. Yes, the OEMP should make clear who the relevant body is and the consultation activity to</li> </ul>

		<b>and MW_MAT2 of the OEMP [REP4-020]) to provide clarity?</b>	be undertaken for each of these documents given the differing requirements.
WM.2.8	Applicant Wiltshire Council	<p><b>Tunnel arisings</b></p> <p>Given the quantity of materials and vehicle movements, please could the Applicant provide an outline methodology for the placement of the excavated materials at land east of Parsonage Down NNR (including that to be used for landscaping around the structural embankments).</p> <p><b>Should a detailed methodology be secured, and should this require consultation with/ the agreement of the Council?</b></p>	In the interest of developing best practice for the placement of spoil and the development of chalk grassland on the arisings, Wiltshire Council's landscape and ecology teams should be consulted on the detailed methodology.
WM.2.9	Applicant	<p><b>Tunnel arisings (off-site disposal)</b></p> <p>Only a high-level analysis of noise receptors along the routes which would be utilised for the off-site disposal of tunnel arisings has been undertaken.</p> <p><b>Please provide further information on how the assessments were undertaken.</b></p>	HE has confirmed that off-site disposal of tunnel arisings will not feature in the Scheme, therefore the Council has not requested further details on this issue.

## APPENDICES

## Appendix A - Glossary

<b>AONB</b>	Area of Outstanding Natural Beauty
<b>BS</b>	British Standard
<b>CEMP</b>	Construction Environmental Management Plan
<b>CIRIA</b>	Construction Industry Research and Information Association
<b>CL:AIRE</b>	Contaminated Land: Applications in Real Environments
<b>dDAMS</b>	Draft Detailed Archaeological Mitigation Strategy
<b>DAMS</b>	Detailed Archaeological Mitigation Strategy
<b>dDCO</b>	Draft Development Consent Order
<b>DCO</b>	Development Consent Order
<b>DMRB</b>	Design Manual for Roads and Bridges
<b>DTA</b>	Drainage Treatment Area
<b>EA</b>	Environment Agency
<b>ES</b>	Environmental Statement
<b>EU</b>	European Union
<b>ExA</b>	Examining Authority
<b>GMP</b>	Groundwater Management Plan
<b>HA 1980</b>	Highways Act 1980
<b>HE</b>	Highways England
<b>HEMP</b>	Handover Environmental Management Plan
<b>HMAG</b>	Heritage Monitoring and Advisory Group
<b>HMP</b>	Heritage Management Plan
<b>HRA</b>	Habitats Regulations Assessment
<b>ICOMOS</b>	International Council on Monuments and Site
<b>INNS</b>	Invasive Non-Native Species
<b>IP</b>	Interested Party

<b>LCA</b>	Landscape Character Assessment
<b>LEMP</b>	Landscape and Ecology Management Plan
<b>LoD</b>	Limits of Deviation
<b>LLCA</b>	Local Landscape Character Area
<b>NE</b>	Natural England
<b>NMU</b>	Non-motorised user
<b>NNR</b>	National Nature Reserve
<b>NPPF</b>	National Planning Policy Framework
<b>NPS</b>	National Policy Statement
<b>NPSNN</b>	National Policy Statement for National Networks
<b>OEMP</b>	Outline Environmental Management Plan
<b>OUV</b>	Outstanding Universal Value
<b>PRoW</b>	Public Right of Way
<b>REAC</b>	Register of Environmental Actions and Commitments
<b>RR</b>	Relevant Representation
<b>SoCG</b>	Statement of Common Ground
<b>SPA</b>	Special Protection Area
<b>SSWSI</b>	Site Specific Written Scheme of Investigation
<b>TA</b>	Transport Assessment
<b>TCMP</b>	Tunnel Closure Management Plan
<b>WCAS</b>	Wiltshire Council Archaeology Service
<b>WHS</b>	World Heritage Site

## **Appendix B**

### **A303 - Technical Note P01**

**Fg.2.4**

**Fg.2.8**

# Technical Note

<b>Project:</b>	<b>A303 Amesbury to Berwick Down</b>				
<b>Title:</b>	<b>Drainage Treatment Areas</b>				
<b>Doc ID:</b>	<b>HE551506-AMW-HDG-SW_GN_000_Z-TN-CH-0001</b>				
<b>Date:</b>	<b>3 July 2019</b>	Version:	<b>P01</b>	Status:	<b>S2</b>
<b>Doc Cat.</b>	<i>Unrestricted</i>	Author:	<b>Ted Evans</b>		

Revision	Date	Prepared by	Reviewed by	Approved by
P01	July 2019	T Evans	W Rogers	D MacKenzie

## 1 Introduction

- 1.1 The A303 Amesbury to Berwick Down scheme (“the Scheme”) forms part of a package of proposals for the A303/A30/A358 corridor, improving this vital connection between the South West and London and the South East and including the upgrade of remaining single carriageway sections on the route to dual carriageway. This investment is stated as a priority project in the National Infrastructure Plan and government’s commitment is confirmed in the Road Investment Strategy (2015-2020). Subject to achieving an approved Development Consent Order (DCO), enabling works are planned to start in early 2020 with the main construction works following in late 2021, and with the Scheme due to open to traffic in late 2026.
- 1.2 Objectives for the Scheme have been formulated both to address identified problems and to take advantage of the opportunities that new infrastructure would provide. The objectives would be achieved by providing a high quality dual two-lane all-purpose carriageway on the A303 trunk road between Amesbury and Berwick Down in Wiltshire. The Scheme would resolve traffic problems and, at the same time, protect and enhance the WHS.

## 2 Purpose of the Note.

- 2.1 AMW have produced an illustrative design for the highway drainage network for the Scheme which replaces the existing A303 trunk road, passing the Stonehenge monument. The surrounding area has many constraints in the form of monuments, Conservation areas, SSSI’s with a section of the Scheme passing through Stonehenge and Avebury World Heritage Site.
- 2.2 The aesthetics of the surrounding land is to be maintained, with any intrusive works not to be visible from the Stonehenge monument, thus preserving its natural beauty. Therefore, there is a need for natural and sustainable surface water drainage solutions throughout the Scheme.

2.3 As part of the DCO procedures, discussion with both the Environment Agency and Wiltshire Council on specific drainage issues have been undertaken. A meeting was held on the 20th June 2019 to review and progress the outstanding water and road drainage issues, attendees were:

- Environment Agency (EA) - Kath Burt, Carrie Whittaker, and Richard Coombes
- Wiltshire Council (WC) - Carli van Niekerk, Danny Everett
- Highways England (HE) - David Bullock, and Ken Marshall
- AmW - Steve Cook, Mark Davin, Ted Evans, Simon Buckley, and Travis Kelly

2.4 This Technical Note provides the technical/design details requested by EA and WC at this meeting to demonstrate the adequacy of the proposed drainage treatment areas.

### 3 Scope of the Note.

3.1 This Technical Note provides the following:

- A summary of the drainage design rationale to more than adequately meet the NPSNN and avoid any increase in flood risk.
- Define, if possible, the storm return period scenario that would result in highway runoff overtopping the drainage treatment areas (infiltration basins).
- Provide the exceedance route diagram for each of the drainage treatment areas.
- Description of the rationale and the clarifications of freeboard remaining in the 1 in 100year+40% scenario
- Provide sufficient information in principle to deem the road drainage climate change allowance to be adequate.

### 4 Standards Used.

4.1 The illustrative design has been carried out in accordance with the following:

- DMRB CD 526 – Spacing of Road Gullies Revision 1
- DMRB HD 33/16 – Design of Highway Drainage Systems
- DMRB HA 37/17 – Hydraulic Design of Road-edge Surface Water Channels
- DMRB HA 40/01 – Determination of Pipe and Bedding Combinations for Drainage Works
- DMRB HA 103/06 – Vegetated Drainage Systems for Highway Runoff
- DMRB HA 106/04 – Drainage of Runoff from Natural Catchments
- DMRB HA 107/04 – Design of Outfall and Culvert Details

- DMRB HA 219/09 - Determination of Pipe Roughness and Assessment of Sediment Deposition to Aid Pipeline Design
- Sewers for Adoption (SFA) 7<sup>th</sup> Edition
- The SuDs Manual 2015, CIRIA C753

## 5 Road Drainage and Climate Change allowances

5.1 The rationale used in the road drainage design is based on the following:

- The current guidance on climate change allowances for England is published by the Government at [www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances](http://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances). This states that for rainfall intensities, used in assessing surface water flood risk, both the central (20%) and upper end (40%) allowances should be assessed to understand the range of impact across the lifetime of scheme into the 2080s.
- It further states that to help to decide which allowances to use, consideration should be given to:
  - The likely speed, depth and extent of flooding for each allowance
  - the vulnerability of the receptors that could be flooded
  - Any built-in resilience measures; and
  - Any capacity in the development to include additional measures in the future.

5.2 The Road Drainage Strategy includes the following:

- An allowance of 1 in 100year+30% pluvial climate change in rainfall intensity within the preliminary design of the Drainage Treatment Area's (DTA's) within the Till catchment i.e. those that are designed as infiltration systems.
- Each drainage treatment area has a 300mm freeboard provision. Where an extreme event occurs and the freeboard is overtopped, exceedance routes have been identified to ensure excess water does not flow towards vulnerable properties.
- The basins are designed based on an infiltration rate one twentieth of the lowest rate corresponding to the soakaway test closest to the area.

## 6 Capacity sensitivity test

6.1 In addition, all the Drainage Treatment Areas have also been assessed on the following basis

### Climate Change

- 1 in 100 year plus 40% pluvial climate change allowance plus 300mm freeboard, having undertaken a 40% sensitivity test that showed no exceedance of drainage capacity

# Technical Note

**Table 1. Remaining freeboard when the 1 in 100 year plus 40% Climate change**

Drainage Treatment Area	Remaining Freeboard
1	251 mm
2	257 mm
4	387 mm
5	268 mm
6	260 mm

**Table 2. Climate change allowance to reduce freeboard to zero**

Drainage Treatment Area	Climate Change Allowance
1	68%
2	70%
4	84%
5	67%
6	66%

- 6.2 When assessed using this 1 in 100 year+40% allowance, the road drainage basins were found to contain the design storm without overtopping.
- 6.3 Although the capacity of the DTA's is not exceeded, (it has been ascertained that under a 1 in 100 year+40% scenario 250mm of freeboard on average remained in each of the DTA's), exceedance routes had been created within the landscaping that reflected existing topography to ensure surface flows would not be directed to any sensitive receptors.

**Details of the exceedance routes are shown on the following drawings, included in Appendix A.**

- HE551506-AMW-HDG-SW\_GN\_000\_Z-SK-CD-0019
- HE551506-AMW-HDG-SW\_GN\_000\_Z-SK-CD-0021
- HE551506-AMW-HDG-SW\_GN\_000\_Z-SK-CD-0022
- HE551506-AMW-HDG-SW\_GN\_000\_Z-SK-CD-0023
- HE551506-AMW-HDG-SW\_GN\_000\_Z-SK-CD-0024

## 7 Storm Return Period

- 7.1 The modelling software, Microdrainage, is limited to model up to a 1 in 1000 year return period storm which does not introduce any exceedance flows, therefore, it is not possible to define the equivalent return period for the climate changes listed

above. It is, however, possible to conclude that the return period will be greater than 1000 years.

## 8 Conclusions

8.1 The design rationale implemented is more than adequate to meet the NPSNN and avoid any increase in flood risk.

- The design is based on a 1 in 100 year+30% allowance for climate change with a 300mm freeboard being maintained.
- The drainage treatment areas capacity was tested against an upper end allowance of 40% for climate change, the remaining freeboard is more than 250mm at each drainage treatment area.
- To reduce the freeboard to zero the climate change allowance would have to be increased to between 66% and 84%, an increase of approximately 30% above the current upper end allowance of 40%.
- For the highway drainage to overtop the drainage treatment areas the design year return period would have to be greater than a 1 in 1000year return period storm.
- The exceedance routes had been created within the landscape that reflect existing topography to ensure surface flows would be directed to the current flow routes and would not be directed towards any sensitive receptors.

8.2 There is, therefore, enough capacity within the illustrative design of the road drainage treatment areas, to manage storm water runoff safely and the exceedance flow routes are not directed towards any sensitive receptors.

# Technical Note

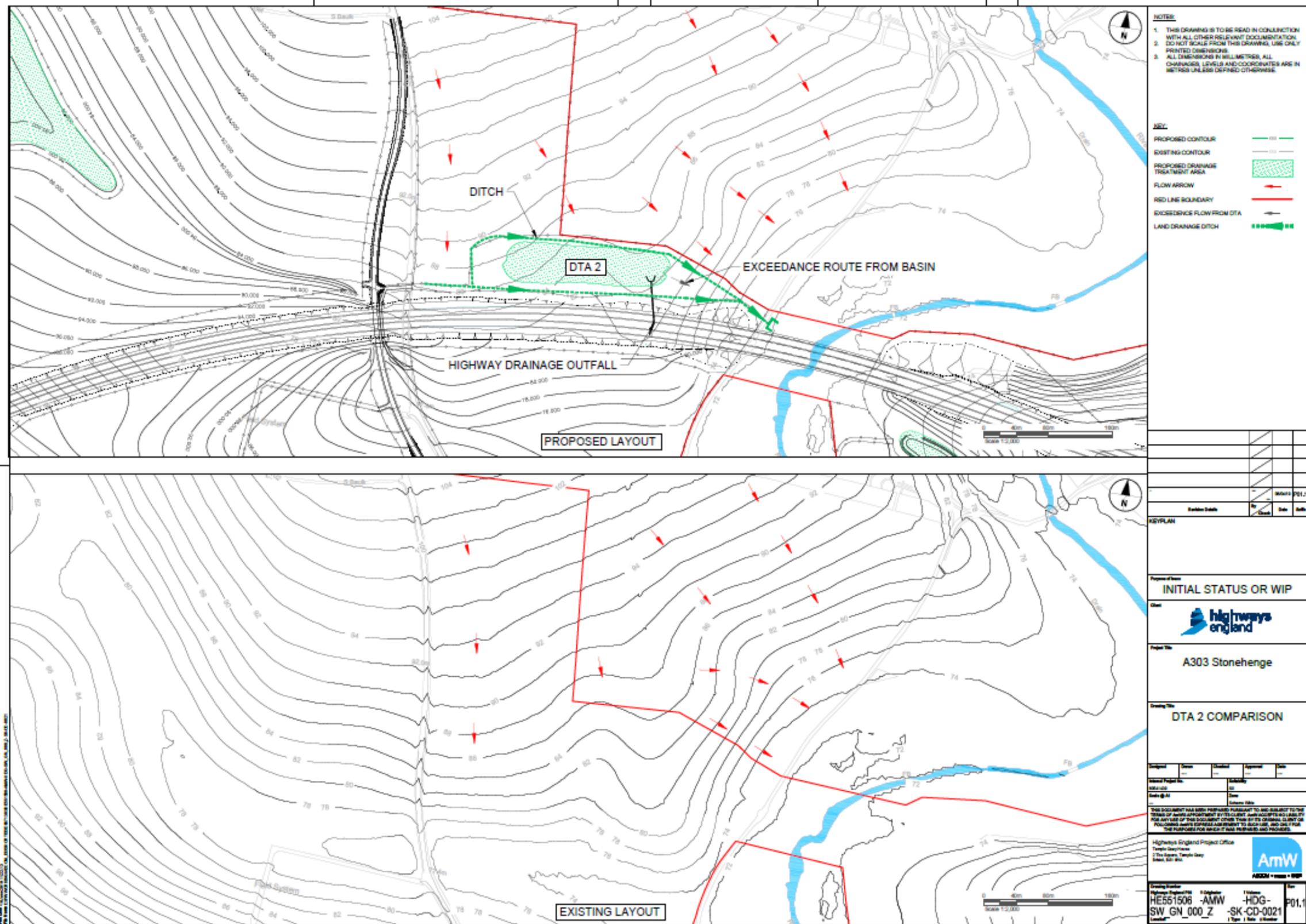
## Appendix A

### Drawings

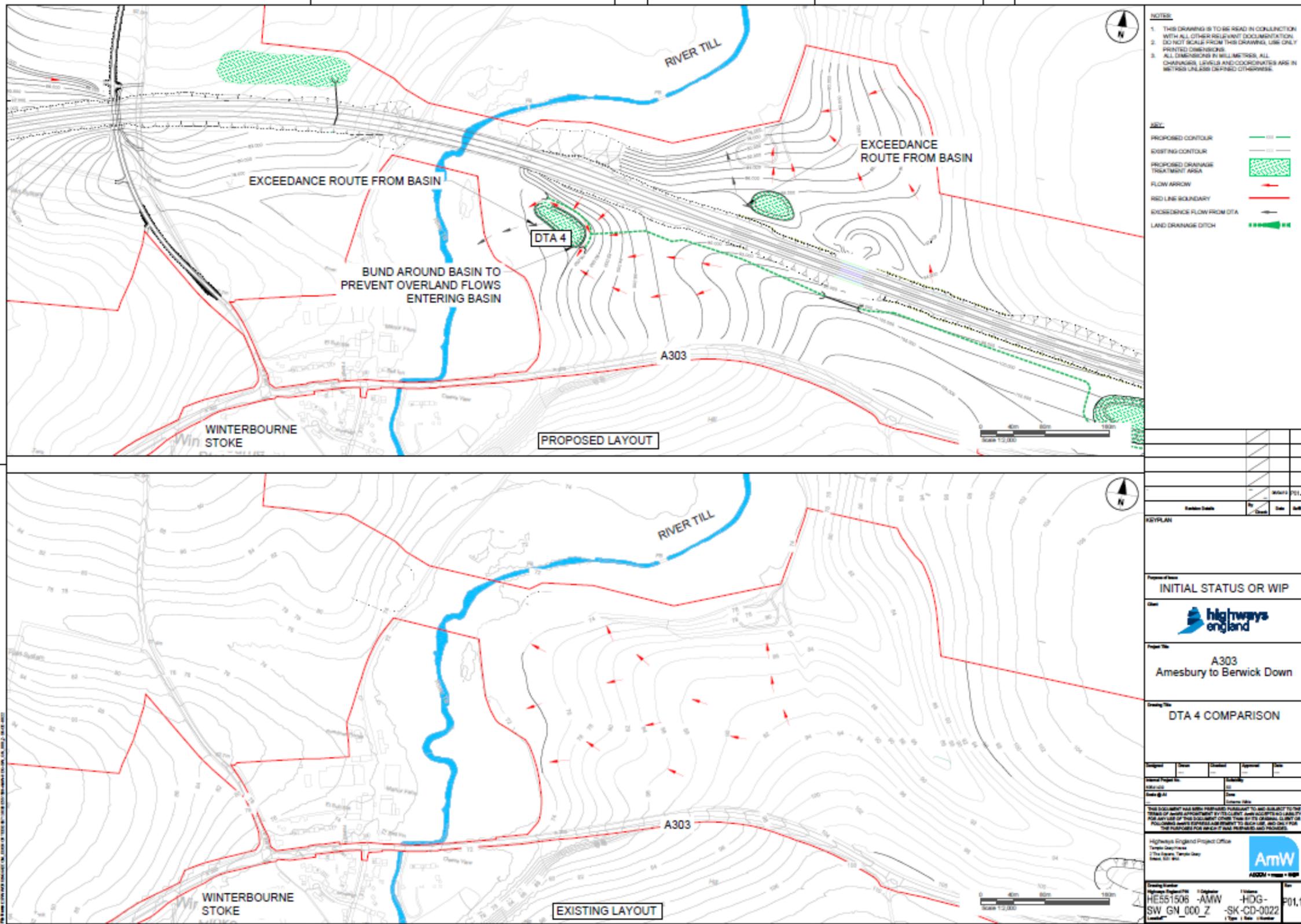
# Technical Note



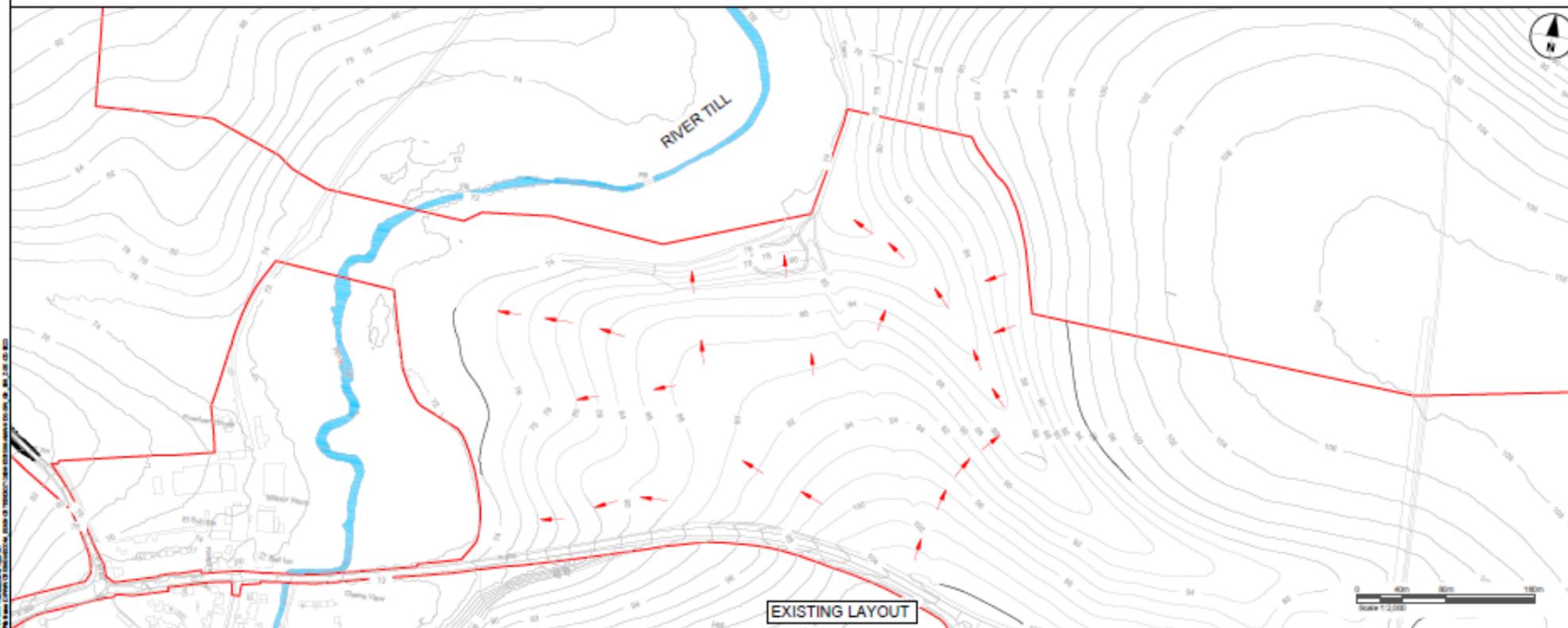
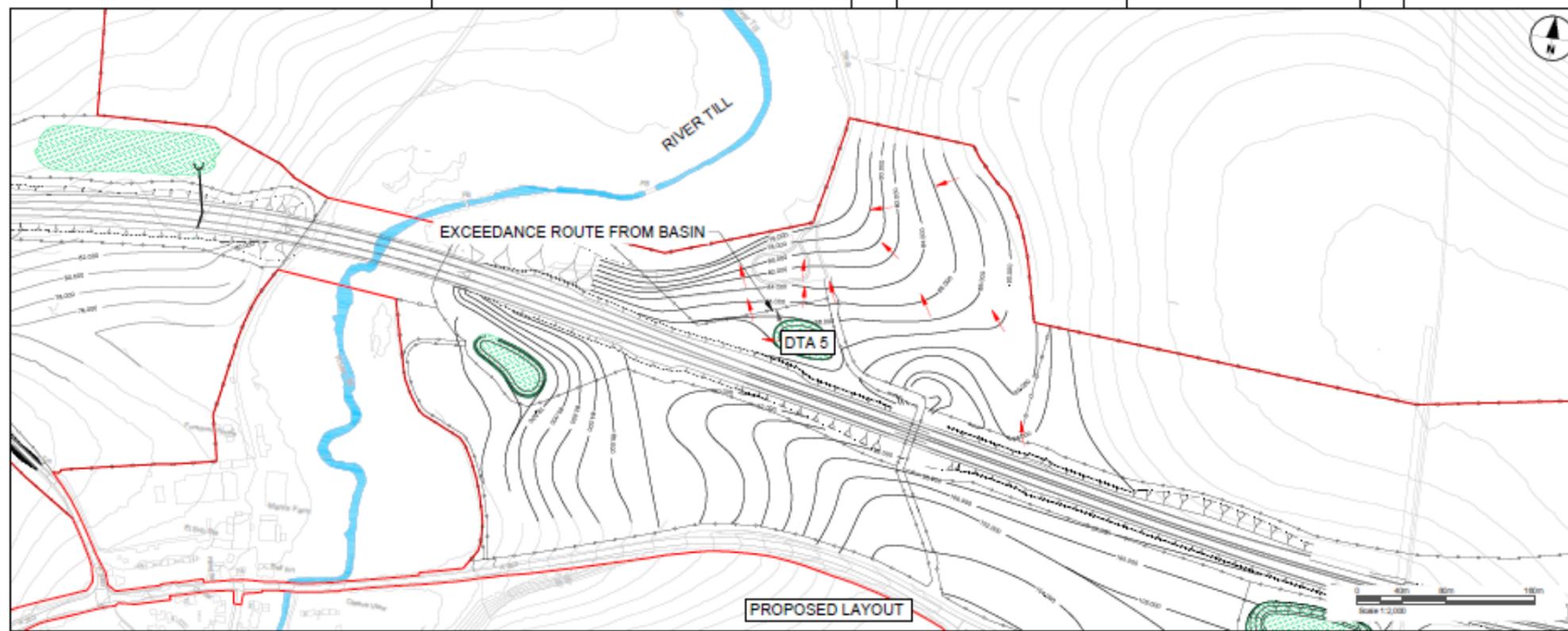
# Technical Note



# Technical Note



# Technical Note



**NOTES:**

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DOCUMENTATION. DO NOT SCALE FROM THIS DRAWING. USE ONLY PRINTED DIMENSIONS.
- ALL DIMENSIONS IN MILLIMETRES. ALL CHANNELS, LEVELS AND COORDINATES ARE IN METRES UNLESS DEFINED OTHERWISE.

**KEY:**

- PROPOSED CONTOUR
- EXISTING CONTOUR
- PROPOSED DRAINAGE TREATMENT AREA
- FLOW ARROW
- RED LINE BOUNDARY
- EXCEEDANCE FLOW FROM DTA
- LAND DRAINAGE DITCH

Number	Scale	Date	Author

**KEYPLAN**

Initial Status or WIP

Client: 

Project Name: A303 Stonehenge

Drawing Title: DTA 5 COMPARISON

Design	Drawn	Checked	Approved	Date

Highways England Project Office  
 Temple Quay House  
 1 The Square, Temple Quay  
 Bristol, BS1 6PL

AmW  
AECOM + mace + WSP

HE551506 -AMW -HDG-  
 SW\_GN\_000\_Z -SK-CD-0023 201



## **Appendix C**

### **A303 Pluvial Flood Risk Review Memo 20190710**

**Fg.2.4**

**Fg.2.8**

**Fg.2.12**

**Fg.2.19**

# Memo

<b>To:</b>	Carli VanNiekerk, Daniel Everett, Wiltshire Council		
<b>From:</b>	Lee Garratt	<b>Email:</b>	lee.garratt@atkinsglobal.com
<b>Phone:</b>	01733 462384	<b>Date:</b>	11 Jun 2019
<b>Ref:</b>	5157973-ATK-ABD-ZZ-RP-EN-0295157973-ATK-ABD-ZZ-RP-EN-030	<b>cc:</b>	L Willis; M Vaughan; Lesley McWilliam
<b>Subject:</b>	TR010025-00991 FRA and Pluvial Hydraulic Flood Risk Comments		

## 1. Introduction

This memo provides further comments and questions following receipt of comments from AmW (AECOM, Mace and WSP) to the findings of the review of the Highways England A303 Amesbury to Berwick Down TR010025; 6.3 Environmental Statement Appendices, Appendix 11.5 (1) Level 3 Flood Risk Assessment Report. Following an initial review (5157973-ATK-ABD-ZZ-RP-EN-0295157973-ATK-ABD-ZZ-RP-EN-029) the TR010025-000767-6.3 Environmental Statement Appendix 11.3 Road Drainage Strategy (Rev 1) reports was supplied to supplement the background to the study.

A telecom was held between AmW (Will Rogers, Mark Davin, Simon Buckley), Wiltshire Council (Carli VanNiekerk and Danny Everett) and Atkins (Lee Garratt) on 7<sup>th</sup> July 2019 to discuss the initial review and replies from AmW in order to gain further understanding and expedite the review process. Following the telecom, the report A303-Technical Note P01 was supplied to provide more information regarding the concept of the highway drainage treatment areas.

This document contains replies following the supply of AmW comments and the discussion of 7<sup>th</sup> July 2019 in relation to the three documents listed above.

## 2. Comments and questions

The comments and questions arising from the review of the documentation can be found in Table 1 to Table 3. The following colour configuration has been utilised to categorise the findings/questions raised:

- General comment
- Acceptable but query raised
- Queries raised requiring justification
- Issues need to be addressed or require specific justification

# Memo

**Table 1. Document findings and Queries to the FRA Documentation**

Section	Discussion	AmW Response (25/06/2019)	Atkins Response
1.4.5	The report states that the findings do not increase flood risk to properties during construction or operation however that does not necessarily make the scheme viable in terms of flood risk as there are other considerations other than properties to consider (for example increased runoff downstream into the River Till)	The detailed conclusions on flood risk are set out in Section 10 of the updated FRA, including effects on other receptors such as the B3083. Note that in the meeting between WC, EA and HE on 20th June 2019 the EA confirmed that the increase in surface water flow to the River Till would not cause an increase in fluvial flood risk.	As discussed, the 12 hour storm duration increases water levels upstream of the A303 and therefore risk is increased. We have concern that there may therefore be risk to the B3083 immediately upstream of the A303 as in the previous design there was a requirement for a bund to stop water spilling onto the road that is no longer mentioned. We would like a narrative regarding the water levels adjacent to the road at this location for the longer duration events (it may be greater than 12 hour duration) looking at the risk (or how the scheme minimises the risk) of breach or overtopping of the land onto the B3083. We require evidence that this has been considered and shown not to be a risk or designed out. Additionally, with the increased water levels upstream of the A303 with longer duration events, does this bring any properties or assets into risk? Commentary on this is also required to ensure risks (or lack of) are captured in the narrative
3.4.3	Do any of the attenuation features change the volume of water that will enter the catchment? Do attenuation features convey water from areas previously outside the current catchment? It is assumed that they do not as they are not specifically detailed in the reporting.	The catchment area remains unaltered from the baseline as a result of the proposed scheme. As such, no attenuation features intersect adjacent catchments. Please refer to the Road Drainage Strategy for highways specific drainage aspects.	We have now reviewed the additional information. Understood however please see other comments regarding DTA1.
Fig 3.2	Annotations on Figure 3.2 state "WC owned culvert under B3083, levels would allow a ford at this location". There is little or no recognition to this ford in the text or explanation how often or at which return period this would become active. Would water spilling over the B3083 be more regular or at a greater depth/velocity than that already experience on the current route of the road? There is no commentary on the risks to users (be it insignificant or dangerous).	Figure 3.2 requires updating to remove text associated with highlighting of a ford crossing. Under existing conditions, the B3083 does act as a ford (north of Winterbourne Stoke). However, benefits associated with the proposed scheme now include for a triple barrel culvert configuration and reconstructed highway at this location, thus removing the B3083 from the floodplain and designation as a ford crossing.	Understood. Telecom concluded that the risk of flooding on the road is reduced compared to the baseline case as culverts are provided to improved conveyance. See comment re blockage below.

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Section	Discussion	AmW Response (25/06/2019)	Atkins Response
8.3.2	If the runoff design is to the 1% annual probability, why does the hydraulic model not include runoff from the attenuation features and not include any rainfall/runoff from the carriageway for the +40% climate change scenario? The model presumably therefore underestimates the runoff into the system.	The para contains an error and should state runoff includes for 1% +40% climate change scenario. Further details on the drainage strategy for the proposed scheme are included in the A303 Amesbury to Berwick Down Environmental Statement Appendix 11.3. The pluvial model does not include for the highways area of the A303 as the separate road drainage system will manage runoff from it.	Understood.
8.3.4	Blockage comments raised in the previous review have been addressed in this updated report which is good practice	Noted.	No further action required
8.3.7	The report details an increase in flow (0.17m <sup>3</sup> /s) from the catchment into the River Till, this does not conform to best practice where there should be no additional runoff due to a scheme. As this therefore is an increase in risk, have any further solutions to mitigate this been considered such as restricting flow under the A303/B3083 to store water and throttle/attenuate runoff back to the River Till?  What volume of additional water would this contribute to the River Till over a longer duration event as this and other developments would cause cumulative effects (increased risk) downstream?  This additional volume of water constitutes a risk to others downstream of the site.	The increase in surface water flow into the River Till as a result of the design event has been discussed with the EA and WC on 20th June 2019. It was noted that a 85% sensitivity test on the River Till had been undertaken in the FRA and had identified no increase in flood risk. The EA confirmed during the discussion on 20 June that the 85% sensitivity test was more than adequate to accommodate the increased 0.17m <sup>3</sup> /s and agreed that the increase in surface water flow to the River Till would not cause an increase in fluvial flood risk.	We are happy if in writing the EA have confirmed that this is acceptable. However, given that the 12 hour duration gave worst case results upstream, does this cause greater flow/volume into the River Till? If it does, has this also been discussed and agreed with the EA?
8.3.8	Ambiguous if this statement is referring to the mitigation already included or whether additional mitigation is required.	Noted - 8.3.8 is a summarising comment.	No further action required

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Section	Discussion	AmW Response (25/06/2019)	Atkins Response
8.3.9	The report discloses that the increased depth of flooding is on land retained by Highways England and therefore shows that others are not affected by the proposals. This therefore shows that the majority of the risks are contained within HE land however an increase in flood risk should be reported and addressed accordingly whoever owns the land.	The changes to pluvial flood risk on all relevant areas of land based on the preliminary design for the scheme are shown on Fig 8.3.	We agree this is shown however the 12 hour (or whatever gives greatest risk) also needs to be shown. A table of change and peak water level upstream of the A303 would be sufficient to show how the scheme raises water levels. This could also be useful to help the narrative of the water level v ground level adjacent to the B3083 (upstream of the A303) concern.
Fig 8.3	What is the impounding volume upstream of the A303? It is assumed it would be less than 25,000m <sup>3</sup> even if blockage was considered?	This volume is confirmed as below 25,000m <sup>3</sup> .	Is this still the case for longer durations and blockage? Please provide evidence
10.3.6	What specifically is the design concept of the managed land drainage (it would be useful to have a description in words)? Is it for example to throttle flows (based on what criteria) and/or redirect flow? 5.4.5 of Appendix 1B states the reasoning of the 1.2m diameter A303 culvert, however what is the design concept behind the 450mm pipes under the B3083?	This aspect is discussed in greater detail within Annex 1A Surface Water Modelling Report, Section 3.7.9.  Design concept for 450mm diameter pipes is to maintain conveyance beneath the B3083 maintaining difference between soffit of pipes design road levels.	No further action required
10.4.5	It is assumed that compounds will have site specific FRAs undertaken (therefore not discussed within the document) to ensure runoff is not increased	Aspects associated with the use of construction compounds and influence of runoff shall be investigated and appropriately managed, as outlined in the OEMP e.g. MW-WAT12	No further action required
10.5.4	See 8.3.7 comment – what is the change in volume downstream over the duration of an event as this may be significant. Could this be mitigated through throttling flow through the A303 managed land drainage scheme to ensure risk is not increased? Has the additional flow been included In the River Till modelling study? Would this	Please refer to response to 8.3.7 above.	See response in 8.3.7

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Section	Discussion	AmW Response (25/06/2019)	Atkins Response
	increase the disparity shown in Fig 5.3 Annex 1A if it was included?		
<b>Annex 1B</b>			
Section	Discussion		
1B 1.1.5	<p>Changes have been made to the hydrological calculations which addresses many of the findings of the previous review.</p> <p>Why has the boundary with the River Till within the hydraulic model been modified and in what way?</p> <p>The report discusses changes to infiltration rates due to deposition of chalk which is a conservative and more detailed approach than the previous study (this is yet to be confirmed if this is represented in the hydraulic model).</p> <p>It is positive that blockage sensitivity testing has been undertaken as suggested in the previous review</p>	<p>Please refer to Annex 1B, Section 3.5 and Section 5.3 for a detailed description of justification.</p> <p>Noted</p>	No further action required
1B 1.3.2	+40% increase in rainfall intensity appears to have been utilised in this and the other studies from a quick review of other documentation supplied which is positive as all approaches are consistent.	Noted	No further action required
1B 2.1.5	Does the modelling of direct rainfall onto the current or proposed road schemes have sufficient detail to accurately depict where runoff is attenuate/released or directed?	The pluvial modelling does not consider the A303 highway as part of the model rainfall catchment as road runoff is directed to and managed within the road drainage network, which is separate from the land drainage network. See the Road Drainage Strategy for further details.	The scheme model shows water on the carriageway therefore is this volume of water 'lost' from the model or does this water enter leave the carriageway in any locations at which it is not intended to? Please review and confirm.
1B 2.3	POINT 1 listed on page 1 is addressed through the utilisation of the updated	Noted	No further action required

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Section	Discussion	AmW Response (25/06/2019)	Atkins Response
	FEH136 data set and the cross check of the monthly rainfall totals against SAAR (SARR shown in Table 3-2 of Annex 2A)		
1B 2.3.3	Is the 'critical' storm duration that of peak flow or maximum water levels?	The critical storm duration was selected in terms of peak flow. Please refer to Section 4.2 for justification of this element.	No further action required
1B 2.4	Comments regarding antecedent conditions from the previous review (POINT 2 listed on Page 1) are addressed. Upper Cini estimates have been recalculated with a ~45% increase rather than ~1300% increase which appears more reasonable.	Noted	No further action required
1B 2.5.5	Boundary conditions utilised are realistic and fit for purpose.	Noted	No further action required
1B 3.7.10	If groundwater is present during a pluvial event, how has this been addressed in the hydraulic model, there is no additional reference in the report and the model does not contain any additional flow/other? The statement made suggests that the culverts would not be able to perform to their full capacity if groundwater was present. Would this not be a limited amount of blockage to use in the "unblocked" scenario for all culverts?	Presence of groundwater has been linked to the blockage sensitivity testing. Please refer to Section 5.4.8. These model scenarios have also been issued to Atkins pending peer review for confirmation.	No further action required following telecom discussion
1B 3.7.13	The document states that where chalk fill is greater than 2m deep, rainfall infiltration/losses will be less than that elsewhere, which would increase the volume of runoff into the system. The model and model log has been checked (NOTE – the calculations on the PD Infiltration Rates tab for 100+40% CC are incorrect as they reference column A when it should be column B for the calcs in columns D and H,	Areas denoted white are highways drainage ponds, as they are designed to only receive road runoff they are not connected to the wider pluvial model for design purposes. The highways drainage solutions are being kept separate as per the DMRB guidance for highways infrastructure. Please refer to the Road Drainage Strategy for further details.	The hydraulic model topography (for the proposed scheme) shows that DTA1 is raised above the floodplain (perimeter is approximately 1.5m higher than ground to the west and >4m to that to the east) and that the invert of DTA1 is at 86.0m AOD. This is at the same elevation of the surrounding ground to the west. The first figure in Appendix A of the technical note appears to show a black line leading from the south (running under the annotation 'proposed Layout), to north into the south west corner of DTA1, this appears to be the proposed route from the road to the DTA (this is the only drawing in which any pipes are shown

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Section	Discussion	AmW Response (25/06/2019)	Atkins Response
	<p>once correctly referenced the results do however match the rainfall utilised in the model, these should be changed for completeness) and the different rainfalls have been applied accordingly. There is however no explanation as why there is an area in the centre of the valley that receives no rainfall (approx. 2% of the entire model area therefore a larger % of the area that contributes to the actual catchment) and why the road does not receive rainfall/runoff when the drainage system is only designed to the 1% annual event (where do the +40% go?). This need adding to the model. Additionally, runoff from the scheme's attenuation features are not present in the model and should be modelled.</p> <p>Below depicts file 2d_rf_STH_C01_P_014</p> <p>Green = areas with existing infiltration rate no change or 0-2m of chalk fill)</p> <p>Red = 50% infiltration (depth 2-4m of chalk fill)</p> <p>Blue = no losses (impermeable 0% infiltration &gt;4m depth of chalk fill)</p> <p>White = no rainfall</p>		<p>connecting the road and the DTA in any of the documentation. If this is the proposed pipe to drain the A303, at what level will the pipe be? It was discussed on the telecom that this would be below the ground however this would therefore fill the DTA from below the invert of the DTA which would have design/operation issues due to siltation etc. If the pipe is at ground elevation, this will change the model topography, it is not currently included in the model. In terms of flood risk this possibly has little implication however there are concerns over how the DTA will operate (although it is understood this is a preliminary design).</p> <p>Additionally, given the discussion regarding flood risk needing to be considered for longer duration events to ensure all the risks are understood and reported, for what storm duration has the surface water design been undertaken. Given the only reference is 'critical storm' we can only assume that gain this is for the 6 hour duration without further information. For a longer duration event therefore is the capacity of the DTA sufficient for longer duration events given that the infiltration raet will be low and the volume of rainfall to fall directly onto the DTA and run into it (mechanism to be determined) will increase. Further information is required to show how the design will work and any changes made will need to be considered and discussed within the FRA as we do not feel that this is fully explained.</p>
1B Fig 4.5	<p>The baseline worst case flood extent/depth (6 hours) has not been compared to a longer storm duration scheme event (12 hours) to ensure any other risks are recognised. The culverts that are proposed may constrict flow (especially if groundwater also partially fills these) and therefore cause ponding of water. Given the longer storm duration is shown to have a larger volume (Table 4.2) the results shown do not confirm if the scheme has</p>	<p>12 Hour storm duration results have been reported. Please refer to Section 4.4 and Figure 4.8-4.10.</p>	<p>As discussed, 12 hour storm duration has been reported however it does increase water levels to approximately the same as the 6 hour +50% of the A303 results and therefore further consideration needs to be given as to the performance of the scheme for longer storm durations and this needs to be reported upon. The current report makes little or no mention if the higher water level causes any undue risks etc</p>

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Section	Discussion	AmW Response (25/06/2019)	Atkins Response
	considered the worst-case scenario for both scenarios. To ensure that the performance of the scheme is fully understood, the results of multiple duration scheme models is required to be tested and discussed.		
1B 4.4	POINT 4 from the findings of the previous review on the opening page of this document are addressed in part in this section of the report however a comparison of worst case for both scenarios has not been undertaken (which is requested in 1B Fig 4.5 and conclusion).	Please refer to response to 1B Fig 4.5 above.	Please see comment in 1B Fig 4.5
1B 4.4.2	Without model results it is not possible to determine if water will flood the new B3083 carriageway with the scale of the Figures provided. Will this occur? If so does the road design mitigate these risks to safe levels? (see Fig 3.2 comment)	No flooding of the proposed B3083 occurs under the 1% + 40% climate change event. This model scenario has also been issued to Atkins pending peer review for confirmation which should address this comment.	The model results for the 1%+40% scenario (with scheme) show a peak water level to the west of the road at approximately 77.95m AOD and the lowest road elevation at 77.8m AOD which suggest that water does flood across the road. This was discussed in the telecom and it was agreed that the road (having check is not ~0.5m higher than current levels) will be less liable to flooding due to be raised and the inclusion of culverts. As there is no impounding structure to the west of the road (downstream of the A303) we are satisfied that generally risk is reduced as only shallow depths of flow would cross the road and it would only occur at a more extreme return period than is currently experienced. It is advised that regular maintenance of the culverts beneath the A3083 is required to ensure that during the winter months they remain unblocked to reduce the risk of water flowing across the road and causing an ice hazard.
1B 4.4.3	Would flood depths be greater if the 12 hour duration scheme model results were compared to the worst case 6 hour baseline event given the statement that the proposed scheme has a substantial impact upon flow. The analysis discussed is based on a like for like duration (which is acceptable) however it would be pertinent to determine the difference in maximum risk of both scenarios. It is envisaged that if the results	Comparison of baseline 6hr and proposed 12 hr results is not a justifiable approach to analysis for comparing like with like. The analysis shown in Section 4.4 comparing similar duration events is appropriate and supports the methodology for assessing risk within the FRA.	We disagree with this statement. Fundamentally flood risk mechanisms have changed from a peak flow to a volume related issue and therefore we need to understand the worst case for both scenarios for the 100+40% event (different durations cause different risks). Where schemes attenuate flow (for instance flood storage schemes), a range of storm durations must be studied to ensure that the design works for a given return period. This is also required to be shown for DTA1 (see comments above) as there is no mention of what storm duration(s) have been utilised to design the scheme. We would like to see these reported upon

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Section	Discussion	AmW Response (25/06/2019)	Atkins Response
	for a longer duration show a greater depth/extent, it would still be within the Highways England land jurisdiction and therefore acceptable, however, it must be ensured that the worst case is presented to ensure all risks are identified.		to ensure that there is sufficient evidence to show risk is designed out/mitigated (which largely it is).
1B 4.4.8	What additional percentage increase in volume would this add to the River Till in this or lower order events? It is not good practice to allow increased runoff into a watercourse for lower return periods. This should be looked into and reported further.	Lower order combinations of rainfall outflow point inputs to the fluvial model (of equivalent AEP) have not been undertaken, only design event AEPs have been considered to support the scheme development thus far.	No further action required
1B 4.4.10	This statement appears ambiguous. It reads that flow in the longer 12 hr duration event is less than the shorter 6 hr duration for the scheme, this is not supported in figures 4.7 and 4.10, it is the other way around.	This paragraph refers to the difference in peak flow, not the peak flow itself. The difference in peak flow is larger during the comparison of the 6 hour event.	No further action required
1B 4.4.11	Is this statement in relation to just the River Till floodplain or the whole catchment? Can we say the proposed scheme for longer events causes no detriment anywhere in the catchment?	For the longer duration event (12hr), the same conclusions have been drawn as for the shorter duration (6hr). However, as reported, there is an increase in overland flow to the River Till.	Has this been calculated and presented to the Environment Agency to confirm they are also happy with this (if it is an increase in flow/volume?)
1B 5.4	Given that the B3083 culverts are smaller than that of the A303, are they not more likely to block? Would blockage increase the hazard rating on the B3083 and increase risk to life? Blockage for the scheme 12 hour duration event does not appear to have been undertaken and presented. This is required to ensure all risks are identified. Does the scheme require raising of land to the west of the realigned B3083 adjacent to the underpass as required in the previous	The probability of more than one of the culvert barrels beneath the B3083 becoming blocked at the same time as the design flood is considered extremely small. As the flow would be conveyed by the remaining two barrels, no blockage scenario was modelled. It is considered that the hazard rating of the B3083 would not increase as a result of the blockage of a single barrel. Figure 5.4 shows the maximum flood depth of water and	We disagree with this argument. There is more 'chance' that a small aperture culvert will block compared to a larger one however the location of the culverts would also have a bearing on the likelihood of blockage. Given the close proximity of the culverts, if a blockage of a 1.2m diameter pipe is likely, it is just as likely that for the width of blockage, two of the 0.45m pipes would be blocked (same blockage width). Having discussed this matter further it has been agreed that although the chance of blockage is open to discussion, blockage of the B3083 does not fundamentally change risk as it is likely that only a shallow depth of flow would overtop the road (if at all) and that should fundamentally be no different to the current

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Section	Discussion	AmW Response (25/06/2019)	Atkins Response
	version of the model? Would blockage of the A303 culvert in the 6 or 12 hour duration event cause loading on this embankment (if it exists)? If it does this information (depth of water as a minimum) needs to be disclosed to outline the risk and show that all risks are designed out/managed.	that there would be no significant loading on the embankment.	situation (which is more likely to happen as the current road is lower than the design).  We are satisfied that further blockage scenarios of the B3083 are not required.
1B 5.4.8	What is the water level increase upstream of the A303 when 50% blockage is applied, a table showing changes in level at differing locations would help the reader to understand the change in risk?	Figures 5.3 and 5.4 both show the flood depth upstream during a blockage. A comparison with Figures 4.5 and 4.6 showing the flood depth for the same event without a blockage demonstrates there is minimal change in water level upstream due to a blockage.	The comparison shows there may be up to 0.49m difference with the colour bandings utilised. However, a check of the model results upstream of the A303 show that the 12 hour duration event is within the 50mm of the 6 hour without blockage scenario therefore what would the increase be for a 12 hour (or worst case water level duration) plus blockage? Would this cause water to overtop/breach onto the B3083 upstream of the A3083?
1B 6.1.5	See 1B 3.7.13 – why is here no rainfall applied to part of the model, this under estimates the volume of water that should be assessed?	The model has now been issued to Atkins pending peer review for confirmation.	The reasoning is understood why this is not applied however please see other comments regarding concerns over the design of DTA1 which need further narrative/analysis.
1B 7.1.3	360 minute duration is critical for the baseline condition, the report does not conclude what the critical duration is for the proposed scheme or present the difference in risk between these two scenarios.	The critical duration in both baseline and proposed are the same and is documented within the FRA.  Cross comparing different duration storms and alternative catchment locations is not best practice, if this is what is intended by this comment.	We disagree with this statement for the reasons outlined above. The analysis does not provide evidence that under other durations risks are greater in some locations event though the evidence supplied shows this.
<b>Annex 2A</b>			
<b>Section</b>	<b>Discussion</b>		
2.7.4 – 2.7.5	The report discusses the likelihood of snow melt coinciding with a rainfall event and provides evidence that this is considered unlikely which addresses POINT 3 on the opening page of this document	Noted	No further action required

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**Table 2. Drainage Strategy Document Comments**

Section	Discussion
General	Have multiple storm durations been assessed for the draining strategy or just the 6 hour duration as per the pluvial hydraulic model? A single sentence to say this is the case would be sufficient if several have been considered to help ensure the reader has confidence in the design/operation of the scheme.
Fig 3.1	Although a conceptual drawing, does the invert of the inlet pipe being below the peak design level have any effects on the hydraulics and operation of the DTAs?

**Table 3. Technical Note Comments**

Section	Discussion
3.1	The second bullet suggests the scope is to define, if possible, the storm return period scenario that would result in highway runoff overtopping the drainage treatment areas (infiltration basins). From reading the report there is discussion regarding the percentage climate change that would be required to fill the basin which is designed with a 300mm freeboard above the 100+30% CC rainfall event.  We require evidence that the sizing of the DTAs is based on an assessment of a range of storm durations (which will have significant effects on the volume of storage required) and not just one otherwise the document does not provide the evidence required. Either the narrative within the document is required to be updated to provide this information or additional work is required to ensure that the scheme works as stated.
General	We cannot conclude if the statements made throughout the report are justifiable without evidence that multiple storm durations have been considered in the drainage design. If multiple durations have been utilised in the analysis, we consider that the findings are sound and the proposal is acceptable (however see specific point below that needs addressing first).
6.3	Also see comment 1B 3.7.13 in table 1. It is recognised that the design is still at a concept level, however there is a lack of information to understand how DTA1 fills. Given that the invert of DTA1 is the same as the ground outside of the DTA and therefore the connection to the road surface water system will either need to be below the DTA (conceptually this does not appear to work) or it will need to be at ground or above ground level (which as a concept works as long as it is correctly represented in the hydraulic model at a later stage). Even if this has not been designed out, a narrative is required to clearly explain the assumptions of the design.

## 3. Conclusions

An initial review of the comments by AmW has been undertaken to establish if the findings of the Flood Risk assessment (supported by the hydraulics study and drainage strategy) are acceptable to the Council.

A telecom was undertaken on 7<sup>th</sup> July in order to discuss some of the responses to help to expedite the review process. Following this discussion a further document (a drainage study technical note) has been supplied and reviewed.

In total three documents have been reviewed and the findings are that generally, the findings are acceptable and compliant with the requirements of the Council.

However, there are a small number of items that are still required to be addressed, most of which can be addressed through further narrative and information being given in the FRA documentation.

There is a requirement to determine the worst case scenario for a storm duration greater than 6 hours based on the current model findings. The 12 hour storm duration under the proposed scheme will increase water levels upstream of the A303 and therefore the maximum water level needs to be determined to ensure that

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there are no receptors at risk under this (or worst water level condition) scenario. The FRA needs to show that the worst case scenario is identified for the proposed scheme and also show that risks are identified and mitigated or design out.

Should the above cause significant changes to runoff (peak flow/volume) into the River Till compared to that already discussed (and agreed) with the Environment Agency, it is advised that the findings are re-presented to ensure the Environment Agency are in acceptance of the changes.

Possibly of greatest significance are queries raised over the design of DTA1 (which is at concept stage). It is not clear from the data provide how this drainage treatment area is fed from the A303 surface water system and it is not clear if the design takes into account a full range of storm durations for the 100 year plus 30% rainfall (also includes a 300mm freeboard to allow for the extra 10% rainfall the pluvial study considers).